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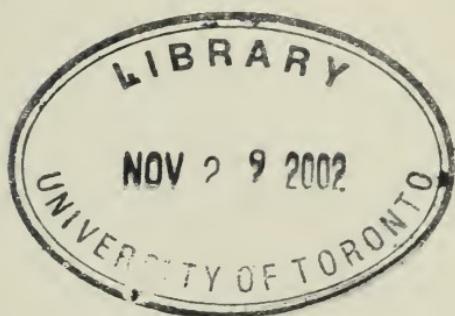
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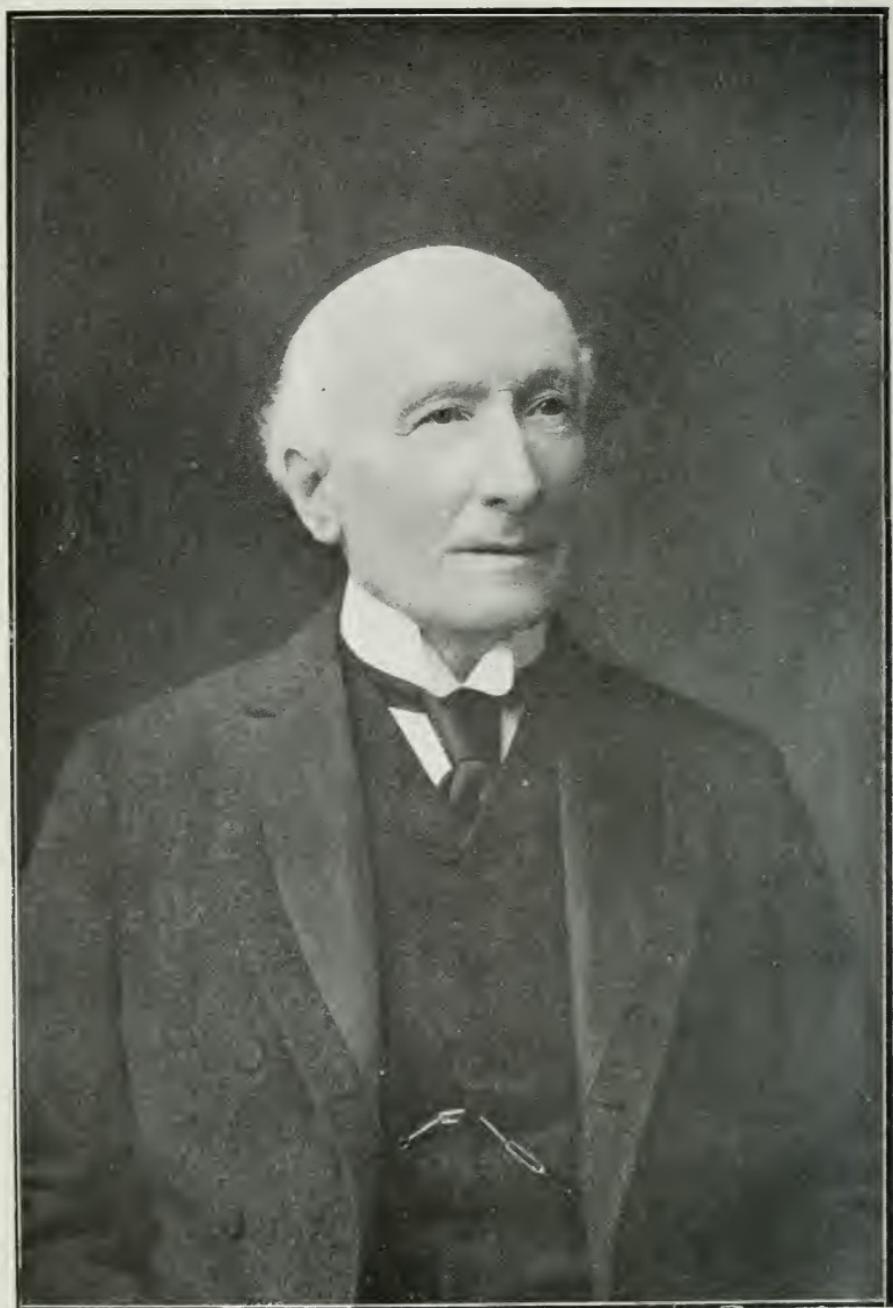


Photo by]

[*Alfred Werner, Dublin*

JAMES LITTLE, M.D., F.R.C.P.I.

Born January 21, 1837. Died December 23, 1916.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

JANUARY 1, 1917.

PART I. ORIGINAL COMMUNICATIONS.

ART. I.—*Fractures and Fracture Dislocations.*^a By JOHN S. McARDLE, M.Ch. (*Hon. Causâ*) R.U.I., F.R.U.I., F.R.C.S.I.; Professor of Surgery, National University of Ireland; Senior Surgeon, St. Vincent's Hospital; Consulting Surgeon, National Hospital, Holles Street, and Children's Hospital, Temple Street, Dublin. (Illustrated.)

I WISH to present to you to-day some pictures which should be a warning to you against careless treatment of fractures of the forearm. Plate I., Fig. 1, shows the dorsal prominence characteristic of fractures of the radius low down; although the deformity is not very marked still it was sufficient to lead to a faulty diagnosis, especially as there is radial displacement of the hand, as will be seen in Plate I., Fig. 2. A slight flexor projection is shown at B in the first figure, thus misleading the surgeon who dealt with this case.

This fracture so simulated a "Colles" that the arm was put up in a single splint. Thirteen weeks after the accident I saw the patient, who told me that it was strange to

^a Continued from Vol. CXLII., November, 1916, page 295.

have the arm so useless after its being in splints continuously for ten weeks. Pronation and supination are lost, and there is fixation of the wrist tendons, and to all intents and purposes the hand, as you now see it, is useless. I have warned you many times that no fracture should be left without frequent examination to see that the bone line is good and the circulation below the line of fracture perfect. "Meddlesome surgery is bad surgery" is a sound axiom, but proper supervision is sound in practice.

Had this arm been taken out of splints, massaged, and then properly replaced, five weeks would have seen this poor fellow at work fit and well; now, as the photographs show, deformity still exists, and worse, the radius has become fixed to the ulna; this prevents lateral movements of the forearm.

The second *x-ray* of this case shows the position of the radial fragments when fracture occurs about the middle of the forearm. The upper one is flexed by the biceps (Plate II., Fig. 4), while the lower is drawn towards the ulna by the pronator quadratus. Plate II., Fig. 3, shows this perfectly, and also shows that the bones have united in this faulty position. These two plates indicate the proper method of setting such fractures. By grasping the hand firmly and forcing it ulnarwards, the lower fragment is brought into line; then flex to a right angle at the elbow, and place the limb in a position of semipronation. This procedure brings the lower into line with the upper fragment. The proper treatment, apart from open operation, of which I shall speak to you later, is to apply a broad posterior splint wide enough to prevent the bandage pressing on the radial fragments, and extending from the elbow to the dorsum of the hand; a short and narrow interosseous splint with scant padding presses the flexor muscles between the radius and ulna, and thus prevents the serious trouble which has occurred in this case.

By following these cases to a finish you become con-

PLATE I.



FIG. 1.



FIG. 2.

MR. JOHN S. M'ARDLE.—*Fractures and Fracture Dislocations.*

PLATE II.



FIG. 3.



FIG. 4.

versant with the possibilities of modern surgery. *There is hardly any trauma of bone uncomplicated by brain or spinal injury that cannot now be successfully dealt with.* I make this statement to you unreservedly, and while you are here please watch and criticise every case, and believe only what you see. Thus, you will learn the best methods of treatment, and enter on your future work with a confidence begotten of sound knowledge.

When a failure occurs the reason of unsucces will not be concealed from you, so that you may know the path of danger as well as the line of safety. Within the next few days I shall expose the radius on the outer side, avoiding the radial nerve where it turns over the bone passing to the back of the hand. I shall then separate the bones by chiselling and bringing the fragments of the radius outward by hooked retractors, apply a plate on the outer aspect where there are no muscles to be interfered with. Early massage to the wrist with passive movements of the joint should make a very useful arm, but not quite as good as if the patient had been dealt with by the method advocated above. Please watch the result in this case.

I would now deal with the metacarpal bones. In a recent examination paper I asked, "How would you treat a fracture of the metacarpal bone of the little finger?" One student of more than ordinary merit made the great mistake of saying that extension was not necessary as the neighbouring metacarpals acted as splints. Nothing could be more fallacious. In every case of complete fracture of a metacarpal bone, the corresponding finger is shortened. To have a really good result in these cases a Pemberton hand splint should be applied, and the finger fixed in extension over the end thereof with rubber plaster.

The case which I now show you resulted from a shrapnel wound which lacerated the palm of the hand, fractured the metacarpal bone of the middle finger (Plate III., Fig. 5), and tore the extensor tendon of the first, second and third fingers. When I saw this case, which came in

after the Battle of Loos, I had very little hope of making a useful hand for the poor fellow; antiseptic treatment soon rendered the parts sufficiently healthy to allow of operation. Raising a D-shaped flap convex downwards from the dorsum of the hand, I exposed the tendon which had been cut through, then I freed the broken ends of the metacarpal (Plate IV., Fig. 6), and inserted a bone peg in the medullary canal of the bone. After this I cleared the ends of the torn tendons, and joined them by catgut suture. This man rejoined his battalion within six months of the original injury.

ART. II.—*Treatment of Rheumatic Conditions.*^a By WILLIAM M. CROFTON, B.A., M.D., National University of Ireland; Visiting Physician, Royal National Hospital for Consumption, Newcastle, Co. Wicklow; Lecturer on Special Pathology, Nat. Univ. Irel.; Pathologist to Steevens' Hospital, Dublin.

RHEUMATIC conditions, like many others, appear to be septicæmias, with focal manifestations. In typhoid fever, for instance, the focal manifestations are in the intestine; in pneumonia, in the lungs; in rheumatic infections, in the joints, muscles, or nerves, while other organs, such as the heart and kidneys, may be involved.

The clinical conditions fall naturally into two groups—the acute and chronic; and this classification is suitable pathologically, for the chronic cases, unless sometimes when they are a sequel to the acute, are usually complicated by secondary infections, while the acute conditions are generally produced by a single infection. They all appear to agree in having a primary focus of infection, from which the blood and other organs become infected. Acute non-suppurative inflammations of joints occur in rheumatic fever, gonorrhœal infections, and acute gout.

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, December 1, 1916.

MR. JOHN S. M'ARDLE.—*Fractures and Fracture Dislocations.*

PLATE III.



FIG. 5.

MR. JOHN S. M'ARDLE.—*Fractures and Fracture Dislocations.*

PLATE IV.



FIG. 6.

Acute gout will be considered with the chronic variety, acute gonorrhœal arthritis need not be considered here.

In rheumatic fever the most common primary focus of infection is in the tonsils, adenoids or gums; from these the blood stream becomes infected *via* the lymphatics. The onset of the fever is accompanied by lesions in the joints. Where there is considerable inflammatory infiltration of the subsynovial and periarticular tissues, the cartilages are swollen, their cells proliferated, and there is more or less effusion into the joints. Lesions in other tissues may follow—endocarditis, which is the rule rather than the exception; myocarditis, pericarditis, pleurisy, pneumonia, &c.

Diagnosis.—The causal organism has been studied by many people, notably Poynton and Payne and Beattie, and has received various names—*e.g.*, the *Diplococcus rheumaticus*. It is morphologically and culturally identical with the streptococcus commonly found in pyorrhœa alveolaris, tonsils, adenoids, &c. It can be isolated from the primary lesion, from the joints, from the blood, and it will most probably be found in the urine and faeces in these cases. As in the case of all other microbes, its virulence varies.

Prophylaxis.—Since there is nearly always a primary lesion in the regions already indicated, and this lesion is usually present for a longer or shorter time before the symptoms of acute general infection arise, it is obvious that the clearing up of such training grounds for pathogenic microbes will prevent the onset of the general infection. Tonsils and adenoids should be removed, the streptococcus isolated from them or from the pus from the gum, if that is the lesion, and a course of vaccine given. The sequence of doses, $2\frac{1}{2}$, 5, $7\frac{1}{2}$, 10, 15, 20, 30, 50, 75, 100 million, will usually be found suitable and adequate. Care must be taken that the patient should not be over-fatigued or exposed to chill for twenty-four hours after a dose. The intervals must be regulated by the occurrence of reactions. No dose must be given with a shorter

interval than 48 hours. If reactions, focal or general, occur, the next dose must not to be given until three days after all signs of reaction have disappeared.

Treatment.—I think I may fairly state that the sole methods of treatment at present in use are rest and salicylates. As to the adequacy of these measures, I will quote an article by French in the *Medical Annual* for 1916. He says :—“ The fact that salicylates in rheumatic fever do practically nothing towards curing the disease is apt to be lost sight of. What salicylates do is to bring down the temperature and relieve the joint pains, an immense boon to the patient, but the pains will recur if the salicylates are stopped, up to a period which is approximately the same as used to be the case before salicylates were employed. . . . It is, however, probable that the mere fact that salicylates relieve the joint pains renders the severity of the subsequent valvular heart disease even greater than before ; for endocarditis is not prevented by salicylates, and some patients who would rest in bed longer if they were in pain, get up, and add unnecessary strain to their inflamed heart valves ; when not being in pain, they believe they are cured of their acute rheumatism.”

The universal method of treatment then is entirely inadequate, either to cure the disease or prevent relapse.

My personal opinion is that a combination of chemo- and immunotherapy will give the best results. I know from clinical experience that an iodine salicylic acid compound in the form of the sodium salt of the di-iodosalicylic acid is a powerful intravital killer of streptococci, and I think it would be well worth a trial in acute rheumatism. The doses I would suggest would be 2 to 5 cc. of a 1 per cent. solution given daily intravenously.

As soon as possible an autogenous vaccine should be made, the dose being $2\frac{1}{2}$, 5, $7\frac{1}{2}$, 10, 15, 20 million, and more if necessary. Even if a vaccine is not used in the acute stage, as I am quite sure it should be, it should be used in order to prevent relapse, which is notoriously common after an attack.

Acidosis—so constant in the disease—should be combated by giving sodium citrate until the urine is amphoteric.

Chronic Rheumatism.—In sub-acute and chronic rheumatism the exudate in the joint and surrounding tissues becomes gradually organised. The cartilages may be at first unaffected, or may be so only near their margins, where they may become eroded. Later these erosions may spread until the whole cartilage is destroyed, and bony ankylosis may result from spread of the infection to the bones (*rheumatoid arthritis*). In other cases the cartilages may be eroded and destroyed where there is pressure, while they become hypertrophied and ossified at the edges, so as to produce osteophytes, some of which may be broken off, and become loose in the joints. Where the bare bones are in contact, they become polished and atrophied. This atrophy may be so extreme that eventually the whole head of the bone disappears (*arthritis deformans*).

In chronic gout sodium urate, or the urates of calcium, magnesium, or ammonium, become deposited in the articular cartilage, which becomes eroded. Later these urates become deposited in the synovial membrane, periarticular tissues, ligaments, tendon sheaths in the periosteum, bursæ, deep connective tissues, and subcutaneous tissue.

Diagnosis.—Chronic rheumatism attacks men and women of all ages, and gout attacks people from middle age onwards, who are usually of an alcoholic habit. Rheumatoid arthritis affects people, usually females, between 20 and 40, and *arthritis deformans* is commonest in females between 40 and 60.

I am perfectly aware that it is the general opinion that each of these clinical conditions—rheumatism, rheumatoid arthritis, *arthritis deformans* and gout—has a different ætiology. I have reason to think, however, that this is not the case, but that the mechanism of their production is the same, and that the differences in the pathological condition are due to differences in the quality of either the toxins or the tissues attacked by them, and the

quantity of urates in the patient's circulation. This opinion has been reached as the result of observing that they all have similar foci of infection other than those of the joints, and as the result of favourable effects on the joint conditions produced by measures adopted to cure these other lesions. For the large majority of all such patients have chronic infections in the upper alimentary or respiratory tract, the microbes from which can and do infect the rest of the gastro-intestinal tract, which is evident from signs and symptoms. These microbes produce the primary infection, and lower the resistance of the tract; the coliform microbes inhabiting the intestine then become pathogenic, so that there is a mixed infection. This chronic inflammation not only interferes with normal digestion by interfering with the proper production of digestive enzymes, but also produces abnormal breakdown products of ingested foodstuffs, such as abnormal amino-acids, abnormal in quality and quantity, besides aromatic amine compounds, which produce rise of blood pressure. In addition to the chronic infection in the intestinal tract, there can be no doubt that microbes from the foci of infection, both primary and intestinal, are passing continually into the circulation. Quite commonly such microbes are excreted by the kidneys, and can be isolated from the urine.

There are thus continuously passing into the blood products from normal and abnormal digestion and micro-organisms. As a rule, much more protein than is necessary for nitrogenous equilibrium—that is, for the maintenance of the nitrogen element in the structure of the protoplasmic molecule—is ingested. The superfluous amino-acids to which it is reduced are deaminised, in the intestinal cells especially, and in the muscles, and the resulting ammonia is synthesised into urea in the liver.

In fatigue of the muscles and in abnormal metabolism produced by fever, where there is anoxæmia, acids are formed, such as sarcolactic acid, and these, getting into the circulation, interfere with the normal metabolism, since the intracellular and tissue ferment work best in

an alkaline medium. Anything that leads to an increase of acids from the intestine, such as are produced from deaminised amino-acids will aggravate the condition, or any poison which interferes with oxidation in the tissues, such as alcohol. Again, the interference with the oxidation in the tissue cells may be due to microbial infection. I have had one patient in whom an acute exacerbation of gout was brought on by over-indulgence in tobacco.

In all these conditions an abnormal amount of uric acid appears to be formed—and it is not—as it is normally—changed into the harmless urea. In gout, it is deposited in the inflamed tissues in the form of salts.

To sum up, the original condition appears to me to be produced by microbes from a focus of infection, supplemented by secondary infections, and is maintained by vicious circles produced by the abnormal metabolic products formed—(a) in the intestine, (b) in the tissues.

Such is the hypothesis on which the treatment of these conditions is founded. If it is correct, then removal of the infecting focus and reduction of the action of the microbes in the intestine ought to produce cure if the tissues affected are not too damaged to allow of this result. And this I have found to be so. By the methods described below several cases of typical gout have been cured.

Prophylaxis.—As in the acute cases, the prophylaxis of chronic rheumatic joints, &c., consists in the clearing up of the sources of infection that produced them. The first twinge of rheumatic pain should be sufficient warning to the patient that he must have his microbial inhabitants investigated, his foci of infection cleared up, and his resistance increased to the microbial inhabitants of his intestine.

Treatment.—Consists in inoculation with a vaccine made from the microbes found in the focus of infection with a vaccine made from the patient's coliform bacilli and with a vaccine made from any microbe, other than *B. coli* or streptococci, which is being excreted from the patient's urine. If staphylococci are being excreted by the kidneys, streptococci isolated from the gums, and coliform bacilli

from the intestine, the series of doses would be in the order mentioned :—

25 million	+	$2\frac{1}{2}$ million	+	$2\frac{1}{2}$ million.
50	,,	+ 5	,,	+ 5 ,,
75	,,	+ $7\frac{1}{2}$	,,	+ 5 ,,
100	,,	+ 10	,,	+ 10 ,,
150	,,	+ 15	,,	+ 15 ,,
200	,,	+ 20	,,	+ 20 ,,
2,000	,,	+ 200	,,	+ 200 ,,
				and so on up to or more

Not uncommonly other microbes than the streptococci are responsible for the primary infection. In several cases I have found Gram-negative bacilli, not described, in the gums or being excreted in the urine. The initial dose of these is $2\frac{1}{2}$ millions.

One such bacillus was motile, it did not liquefy gelatine. It produced acid, but no clot in milk. It produced acid and gas in glucose, saccharose and mannite. It produced acid very slowly, but no gas in lactose. Another, feebly motile, produced acid in saccharose and glucose. It did not ferment lactose or mannite in five days, and produced acid and clot in milk. Another, non-motile, produced acid in lactose, saccharose and glucose, but not in mannite, and acid and clot in milk. So that many different kinds of these Gram-bacilli appear to infect.

The correction of acidosis is particularly important in the treatment of these conditions, and the control of reactions by iodine therapy most helpful.

Muscles.—Muscular rheumatism or fibrositis is investigated and treated in exactly the same manner as that of the joints.

ART. III.—*Hypnotism.*^a By CECIL P. SMYLY, M.D.

Univ. Dubl.; F.R.C.S.I.; Anæsthetist to Sir Patrick Dun's Hospital, Dublin.

THE dreams and beliefs of one generation become the superstitions and sciences of its successors. In the earliest times certain phenomena were recognised; by some they

* A Paper read before the Dublin Branch of the Society for Psychical Research, Nov., 1916.

were regarded as of the utmost esoteric importance, by others rejected as rank impostures. As knowledge and experience increased, the facts—as we know them—slowly and painfully emerged from the mists of speculation.

The natural desire for health and happiness in this life and curiosity as to future existence gave birth to Alchemy, Astrology, Medicine, Philosophy and Religion, each of which has gone through various phases of development, forming numberless combinations and producing many strange offspring. Alchemy, in the search for the Elixir of Life and the Philosopher's Stone, became the ancestor not only of modern Physics and Chemistry, but also of modern quackery. Medicine and Astrology were closely connected up to quite recent times, and even at the present day the magical prescription is placed between the signs of Jupiter and Virgo. But Astronomy turns aside from its poor relation Fortune-telling, and has little or no interest for the medical student who does not require a smattering of it for his Arts degree. Philosophy and Religion have in various ages flirted with most of the others, so that nowadays we find a large family, the members of which exist on very varying terms of intimacy, some closely bound together by interest as well as affection, others quite ignorant of their common origin, or filled with the suspicion and hatred which so often accompany it.

Out of this primitive nebula, in which philosophers debated the nature of the gods, Priests cured the ills of mankind and Physicians cast horoscopes, arose the germs which later developed into what is now called Hypnotism.

Without going so far afield as Egypt, Persia, India or Japan, in all of which they are signs that the facts of mental power were known even in the most ancient times, and passing over allusions in classical literature that seem to refer to such subjects, we find the first attempt at a scientific theory as to their explanation made in Europe in the early part of the seventeenth century.

Theophrastus Paracelsus used magnets in the treatment of diseases, but he also applied the term “magnetic” to

all action real or presumed between earthly bodies. His views were more fully and clearly set forth by Van Helmont, who proved that sublunaries influence each other as the magnet influences iron by such well-known facts as that at one glance of a basilisk is fatal, or that rubbing a sapphire on a boil will extract the matter from it. But this influence was not corporeal, it acted "not by communion of a substantial evaporation, but by the medium of an unperceivable light."

More than a century later Maxwell maintained that all bodies gave out rays which they derived from the stars, and by which they produced their effects. In all these theories the rays were only the medium through which the spirit manifested itself; as Fludd says, "It is not the starry Light which penetrateth so deeply or operateth so universally, but the Eternal Central Spirit." Maxwell states still more emphatically, "The world is quickened by the Original and Supreme Mind, which contains in itself the seminal causes of all things. These causes proceeding from the splendour of the Ideas in the Original Mind, are as it were instruments by which this great body is moved, and links in the golden chain of Providence."

Out of the experiences and theories of his predecessors Anton Mesmer elaborated a scheme more congenial to the scientific spirit of the latter part of the eighteenth century. He had written his doctoral thesis on "The Influence of the Planets on the Human Body." In Vienna he experimented with the Jesuit Father Hell in the use of magnets. He had probably heard of the cures effected by Father Gassner in Suabia, and of the convulsions which preceded them.

In 1779 he laid down the following propositions:—(1) There exists a mutual influence between the heavenly bodies, the earth and animal bodies. (2.) The medium through which this influence acts is a fluid, of inconceivable tenuity, universally present and permeating all things. (3.) This influence is especially noticeable in the human body on which it confers properties analogous to those of

the magnet. Hence the name Animal Magnetism. (4.) The Force can be exerted at a distance, reflected by mirrors and augmented and propagated by sound.

Thus Mesmer completely rejected the Central Spirit, replacing it by a Force, somewhat resembling the newly discovered Electricity, and in order to be able to treat a number of patients at a time he invented the baquet, the construction of which was obviously based on that of the galvanic cell. It consisted in a covered tub in which layers of broken glass and bits of iron were immersed in water. Through the cover emerged several iron bars which could be bent so as to touch the individual patients. The central rod was straight and upright, and was magnetised by the operator, its effect being greatly increased when a brightly shining object was placed on its top. When connected with the baquet the patients exhibited a variety of phenomena, the most frequent and noticeable of which was the Crisis, for the victims of which a special padded room was provided.

Mesmer's theories and practice met with the usual reception accorded to such innovations. The medical faculty, almost without exception, denounced him and all his works with bell, book and candle, while (perhaps for that very reason) peers, peeresses, priests and peasants flocked to his séances.

Dr. Deslon, an eminent physician, was one of his earliest converts to Animal Magnetism, and not only worked with Mesmer for several years, but carried on the practice after Mesmer shook the dust of Paris from his shoes. Under him the Crisis gradually came to occupy a less central position ; but it was not till 1784 that the Marquis de Puységur first observed the state of Induced Somnambulism, and its remarkable properties. From this discovery he came to the conclusion that "Animal Magnetism does not consist in the action of one body upon another, but in the action of the Thought upon the vital principle of the body." The Universal Fluid might or might not exist, the whole secret lay in Belief and Will.

Deleuze, who began to study Animal Magnetism in 1785, was convinced of the existence of the Fluid, which his somnambulists had seen, felt and tasted, but maintained that it was set in action and controlled by the Will.

Both Puysegur and Deleuze, therefore, promoted the physical Fluid of Mesmer to the position of a Vital Fluid, depending on Will and Belief; but it must be noted that the Belief and Will were those of the operator, not those of the patient.

After the political revolution in France, a revolution even more startling took place in the world of science. From Russia to France Magnetism was practised throughout the North of Europe, except in Great Britain, and the former hostility gave place to an unreasoning belief in all its more marvellous manifestations.

Alexandre Bertrand, however, after years of careful experiment and investigation, came to the conclusion that the Crisis, the influence of the Baquet, the streams of light seen by some somnambules, the conduction by iron, the reflection by mirrors, in fact all the proofs of a celestial, magnetic, or electric fluid, were the result of the patient's imagination, which in the trance became peculiarly susceptible to the slightest suggestion either by word, look or movement on the part of the operator.

Unfortunately his experiments alarmed the hospital authorities, and in 1821 the practice of Animal Magnetism in the State Hospitals was forbidden, and Bertrand's theory sank into oblivion.

In England at the end of the eighteenth century, Animal Magnetism was practised only by a few quacks, whose chief aim in life was to extract as much as possible from the pockets of their pupils and patients, and after the exposure of Perkins' Metallic Tractors, public interest in the subject seems to have died down.

It was not till 1829 that Chenevix, who had learnt the art in Paris under the Abbé Faria, gave demonstrations in London. Amongst those who witnessed his performances was Dr. Elliotson, who was greatly impressed by

them. But Chenevix died in the following year, and with him the interest which he had aroused.

In 1837, after seeing Dupotet treating patients in University College Hospital, Elliotson, the senior physician, began to practise Mesmerism himself. He took up the subject with his characteristic enthusiasm, and quickly became the victim of impostors, who exposed him to the virulent criticisms of the editor of the *Lancet*, and to the strictures of the hospital authorities. Accordingly, he sent in his resignation, and devoted himself from that time to a furious warfare with his more orthodox brethren, and to the propagation of the Science of Animal Magnetism.

James Esdaile, like Elliotson, was a Mesmerist; that is, he believed in the existence of a Magnetic Fluid. He was a surgeon in India, where he carried out experiments so successfully that in 1845 he was put in charge of a small hospital in Calcutta. During his six years' practice there he performed more than 260 major operations on patients rendered insensible by Mesmerism, and reduced the mortality by more than forty per cent., but the many advantages of chloroform and ether, which were then coming into use, completely overshadowed those of his method of producing anaesthesia.

Meanwhile it was beginning to be felt that perhaps unnecessary violence had been used in discrediting Animal Magnetism. America gave birth to Electrobiology, and its professors not only familiarised the public with the phenomena of the Trance, but showed that these arose from the subject's own imagination, and not from any miraculous fluid. Possibly the renewed interest thus awakened might have led to the proper scientific investigation of Somnambulism and Suggestion, but the close association which soon sprang up between Mesmerism and Phrenology turned aside many, and when the Mesmerists embraced Spiritualism, the public odium attached to the latter movement spread to the former, with the result that both were condemned to obscurity.

In 1841 James Braid, a Manchester surgeon, was led

to carry out experiments by what he saw done by a professional mesmerist. He found that the phenomena ascribed by Reichenbach and others to mysterious Forces and Fluids were entirely subjective and dependent on the imagination of the percipient. It is from his writings that we inherit the word Hypnotism ; but, like Bertrand, he failed to gain a following among his contemporaries, and his teaching seemed to die with him.

For nearly twenty years the scientific world failed to recognise the enormous advance which he had made, then, in 1860, Liébault started his hypnotic dispensary at Nancy, founding his views on those of Braid. Among the many doctors who visited Nancy were Professor Bernheim, who published the first important work on the subject, and the late Sir Francis Cruise, the first to introduce this method of treatment into Dublin.

In 1890 a committee of the British Medical Association set the seal of professional recognition on the use of Hypnotism in the following report :—

“ The Committee, having completed such investigation as time has permitted, has to report that they have satisfied themselves of the genuineness of the hypnotic state. No phenomena which have come under their observation, however, lend support to the theory of Animal Magnetism.

“ The experiments which have been carried out by members of the Committee have shown that this condition is attended by mental and physical phenomena, and that these differ widely in different cases.

“ Among the mental phenomena are : altered consciousness, temporary limitation of will-power, increased receptivity of suggestion from without, sometimes to the extent of producing passing delusions, illusions and hallucinations, an exalted condition of the attention, and post-hypnotic suggestions.

“ Among the physical phenomena are vascular changes (such as flushing of the face and altered pulse-rate), deepening of the respirations inability to control suggested movements, altered muscular sense, anaesthesia,

modified power of muscular contraction, catalepsy and rigidity, often intense. It must, however, be understood that all these mental and physical phenomena are rarely present in any one case. The committee take this opportunity of pointing out that the term 'hypnotism' is somewhat misleading, inasmuch as sleep, as ordinarily understood, is not necessarily present.

"The Committee are of opinion that as a therapeutic agent hypnotism is frequently effective in relieving pain, procuring sleep, and alleviating many functional ailments. As to its permanent efficacy in the treatment of drunkenness, the evidence before the Committee is encouraging, but not conclusive. Dangers in the use of hypnotism may arise from want of knowledge, carelessness or intentional abuse, or from the too continuous repetition of suggestions in unsuitable cases.

"The Committee are of opinion that when used for therapeutic purposes its employment should be confined to qualified medical men, and that under no circumstances should female patients be hypnotised except in the presence of a relative or a person of their own sex.

"In conclusion the Committee desire to express their strong disapprobation of public exhibitions of hypnotic phenomena, and hope that some legal restriction will be placed upon them."

This report embodies the views of most medical men who have given any attention to the matter, though many would think that sufficient stress is not laid on the importance of suggestion. Bramwell has advanced so far that he maintains that the trance or state of somnambulism is not only unnecessary but a positive hindrance, and that the best results are obtained in the first or hypnoid state.

The word Suggestion is nearly as blessed as the word Mesopotamia, and has been employed to cover an enormously wide area. It may be defined as the arousing in the mind of ideas which are accepted without reservation, consideration or argument, the excitant being either the owner of the mind or another. The crudest form of sug-

gestion is verbal, but it is by no means the only one ; suggestions can be made by a movement, a glance, the tone of the voice or by an appeal to any of the senses. Some even maintain that suggestions can be transferred from one mind to another without employing any intervening sense. This is called Telepathy, or Thought Transference. There can be no doubt of the fact that occasionally, in circumstances that are little understood, such transference does take place spontaneously, though many of the instances given can be explained otherwise. Very much more rarely the reaction can be elicited deliberately, and in the successful experiments the messages are often transmitted very imperfectly. The fact that they can be transmitted at all is so wonderful as to be almost incredible, but an enormous amount of carefully controlled and meticulously reported experiments must be made before any general statement on the subject can be formulated.

Most of the erroneous views about Hypnotism are based on imperfect observation or preconceived ideas, interpreted so as to back up some pet theory. It is, therefore, most necessary to note all the attendant circumstances, however irrelevant they may seem, before deciding that a fact is what may be called a true fact, and then to avoid, as far as possible, either chopping off bits or stretching out the fact to make it fit into the space it is hoped to fill. Of Hypnotism it may be said with peculiar truth, " Seek and ye shall find." In the above brief historical sketch can be seen what divergent theories have been and are still based on what has been observed ; and how most observers have fallen into the fallacy of deducing general laws from particular instances.

Suggestion is always at work, in everyday-life as well as in hypnosis, though it acts more strongly in some circumstances than in others. The restriction of muscular movements, fixity of attention and expectation all tend to increase suggestibility, and as these conditions are generally present when Psychical experiments are made, special care must be exerted to note or nullify its action.

Many experimenters, however, have failed even to notice the possibility of suggestion, and are most indignant when such an explanation of their results is proposed. Another thing to be noted is that just as physical nature abhors a vacuum, so unless a given suggestion seems to the percipient complete, his mind rounds it off and fills up any lacunæ in accordance with his own fancy. To give an illustration of these two points : I once said to a somnambulist, "Tell me what you see." At first he said all was dark ; then he saw rippling waves ; then a rocky shore ; among the rocks sat a lady in a red cloak gazing out over the waves. I asked what she was looking at. Turning his head over his shoulder, he replied : "There is something in the water ; it is a man's head ; he is swimming ashore ; he appears to be about forty or fifty. The lady has given him her cloak, and they are conversing together." On being asked, he was able to repeat a few words, which I recognised as Greek. When awakened, he at once remembered that it was Odysseus meeting Calypso that he had seen. But his description of the scene bears no resemblance to that of Homer. The whole of this vision or dream obviously arose from the word "see." Owing to the extreme incompleteness of the suggestion his mind started to fill it out ; the pun immediately suggested waves, and then his fancy rapidly supplied the rest.

In different circumstances, and with a different type of mind, a dream might have occurred having a bearing on more modern subjects, and would have been hailed by the inconsiderate as a clear demonstration of Clairvoyance. Conversely, many cases of clairvoyance depend on the indefinite description first given by the medium, the listener fills in the details for himself or herself, and often unconsciously passes them on to the medium, who then proceeds to feel the way towards further revelations.

In all these cases, especially where the communications are made a source of income, fraud must always be at least suspected. It may or may not be conscious fraud, for frequently the medium does not know enough about

the subject to detect the inherent fallacy, and may be just as ignorant as the listener of the means by which the information has been acquired.

In table-turning, rapping, automatic writing, Planchette and so on, the movements commence in the involuntary contractions of the muscles concerned. After sufficient training, coupled with expectation, the movements become more co-ordinated, and words or sentences may be produced. Here, again, the circumstances are such as enormously to increase the suggestibility of the participants, and if the experiments are frequently carried on a state of actual hypnosis is almost certain to occur. I had one subject who got into a state of somnambulism, and distinctly felt a heavy mahogany table tilting, though I can vouch for the fact that it did nothing of the sort.

As to the subject matter of the messages received, it will almost invariably be discovered that some one in the party was in possession of the information imparted, or held the opinions expressed. In the few cases where this is not obvious, forgetfulness, such as that which leads to unconscious plagiarism in literature, will as a rule account for the results.

Many excellent and worthy people feel insulted by the mere idea that they could have been hypnotised, and that what they most truthfully maintain that they saw, heard or felt, had no objective existence. This is the result of the totally mistaken idea of what Hypnotism really is, which has been handed down from the old mesmeric theories.

To begin with, Hypnotism is a misnomer. The condition known as Somnambulism is only one, and by no means the most common manifestation of the state of Hypnosis; and in spite of a superficial resemblance differs in almost every essential from normal sleep.

Before describing the different varieties of hypnosis, it will not take long to tell the little that is known about ordinary sleep. Diminution of impulses to the brain and fatigue are predisposing factors, but they are by no means

essential. Men and animals can sleep in conditions generally supposed to render sleep impossible. And while one may be too tired to sleep, those who have nothing to do, and don't do it, often sleep longer and deeper than the active and energetic.

The fact that the blood pressure in the body rises during sleep has suggested that anaemia of the brain is the *causa causans*, but it may be just as well the result. Histological changes in the brain cells have been detected in animals after prolonged anaesthesia with ether and chloroform. But no conclusions can be drawn from them as the unconsciousness is produced by the presence of a poison in the circulation which is not the case in normal sleep. If the products of diurnal activity act as a narcotic, as has been suggested, their mode of action cannot be demonstrated, and none of the theories of a chemical cause have stood the test of experiment.

Normal sleep, therefore, would seem to be merely one stage in the rhythmic activity of nerve cells. All the cells of the body go through a regular ebb and flow, the rate of which, however, varies with the type of cell; and this period of low activity of the central nervous system allows the other cells to recuperate their stores of energy, even though they may not all cease work.

The outward characteristics of normal sleep are more familiar. The eyes are closed, the muscles are relaxed but still under the control of the brain, which itself is capable of quickly resuming its full authority, the condition comes on at regular intervals and spontaneously, and unless disturbed comes to an end spontaneously; during the period of sleep all the activities of the brain diminish, though probably they never completely cease. Dreams are the result of this cerebral activity when the control of the intelligence is relaxed. They are composed of fragments of past experience expanded, contracted, dissociated, combined and superimposed in what appears to be an erratic manner. In almost every case their origin can be traced to some event in the preceding day, which may

occupy only a trifling position in the content of the dream, while certainly in children, and probably in adults, they represent the fulfilment of some desire which could not be obtained in a less allegorical way.

In Somnambulism, which is to the average person the only form of Hypnosis, the conditions are very different. Every muscle of the body, every function of the mind becomes capable of the most extraordinary modification. Just as under extreme stress of fear or other emotion people will perform feats of strength of which they never believed themselves capable, so in hypnosis the subject will rest, more or less comfortably, with his head on one chair and his heels on another, and even support a considerable weight at the same time, or perform other acrobatic tricks.

The activities of the mind, however, are even more remarkable. I have alluded to the visions or dreams which occur both spontaneously and otherwise. In this connection it is peculiar that while taking part of the suggested idea the subject will often refuse other parts that do not fit in with his own conception of the idea.

The dreams, however, though interesting and sometimes entertaining, are by no means the chief mental phenomena. Memory can be moulded to an almost incredible extent. One youth was able to go through a rehearsal without prompting, after reading his part through once. Another was able to recall and relate events of his childhood, which in the normal state had completely faded from his memory. Others will make the most elaborate calculations without hesitation and with the most extraordinary accuracy; and the perception of the duration of time is often peculiarly exact, as Bramwell has shown in experiments which can easily be repeated.

All the senses, too, are capable of modification, e.g., on one occasion I reproduced the Indian conjuring trick of the boy and rope for two subjects at the same time. One had the greatest objection to what he called niggers, and refused to shake hands with the boy. When I ex-

plained that it was some one he knew he recognised him and even mentioned his name, and after shaking hands with him, wiped off the grease paint in the most natural way, and held a long conversation with the spook. I afterwards suggested that when they awoke they should not be able to see or hear me, and it was only when I touched each of them that they realised my presence.

In connection with sight, I have got several subjects to read aloud from a book held upside down, sideways or upright, with almost equal facility, and at a slightly greater distance than they did ordinarily. I may mention that reading sideways is not so impossible as it sounds. Telescopic sight I believe only to occur in the dreams, as in the case of the boy who saw a policeman in the distance, and when asked his number saw S. 67 appear greatly magnified. Total blindness has also taken place, both during the trance and as a result of posthypnotic suggestion.

The sense of hearing is just as easily affected as that of sight. Usually the subject appears to hear nothing except the voice of the operator, but on suggestion music. &c., can be perceived. That the deafness is only apparent is shown by the fact that suggestions are sometimes taken from extraneous sounds. One of my subjects, when left to himself for a while, went off into a long dream, which was started by the noise of the wind in the Venetian blinds.

Taste and smell are very closely associated. In man they have degenerated to a very great extent, but embryology shows what an important part they formed of the primitive organs. The depths to which their roots go in everyday life may be illustrated by the way in which the merest whiff recalls scenes that had apparently been totally forgotten.

Of far more practical importance than any of the above is the effect produced by suggestion on common sensation. By a word it can be totally abolished, augmented, or altered to almost any extent. Both before and since

the days of Esdaile operations—both major and minor—have been performed without the patient feeling pain either at the time or afterwards, and it has been remarked that wounds in which no pain is felt seem to heal more rapidly than others. This, of course, may be due either to the patient not being exhausted by the pain, or to the pain being the indication of some septic process in the wound, so that a metaphysical explanation is not essential.

Sensations of heat and cold, electric currents and shocks, are among the simpler phenomena, but the peculiar muscular sense is also not immune; that is to say, the subject may believe he is standing when he is lying or sitting, and may feel himself floating in the air or in water, or that a limb has been removed.

The sense organs only appear to be more susceptible than others; practically every structure that is connected with the nervous system is liable to be affected by suggestion. The effect of sudden emotion in Exophthalmic Goitre is well known to medical men; to the public its effect on the heart is more familiar. Similarly, the connection between the mind and the digestive system has long been recognised. Melancholy was attributed to the action of the liver, attacks of the spleen are self-explanatory, and Rabelais has alluded to the effects produced by sudden and extreme alarm. Similar results follow suggestion; appetite and digestion being specially liable to its action. Every one has at least heard of how an unpleasant story or piece of news will take away all taste for food, and of the efficacy of bread pills.

That the circulatory system is under the influence of the mind is obvious to any one who suffers from bashfulness or shyness, and the glands of the skin often show their sympathy with the sufferer.

There is one more difference between somnambulism and ordinary sleep to which attention should be drawn,—namely, posthypnotic suggestion. Like so many other scientific terms, besides being barbarous in its formation

the name is deceptive ; the suggestion is given during the hypnosis, but it is carried out afterwards, or at first sight appears to be carried out afterwards. As a matter of fact, in many cases the loss of memory which generally follows somnambulism continues till the suggestion is carried out, so that probably the subject does not really wake till then, however wide awake he may appear in the interval.

Such are some of the extraordinary phenomena that have been observed during somnambulism, but most if not all of them also occur in what are called the lighter stages. For convenience sake Hypnosis is divided into the light or hypnoid stage, in which there is little or no apparent change from the normal. This is the most common, and can be produced in about ninety per cent. of ordinary individuals. It is in many cases the most useful for therapeutic purposes, as the patient's waking consciousness is able to work in support of the suggestions given. Obviously posthypnotic suggestion occurs in it, as otherwise the effects would pass off as soon as the condition itself does.

In the second stage the eyes can generally not be opened, the patient appears to be asleep, and nearly any suggestion is accepted. The third stage is characterised by Amnesia, That is, on being roused the subject recollects nothing that has occurred since he went asleep. This forgetfulness, however, is nearly as strange as anything else connected with hypnotism, for if hypnosis be induced a second time, the memory returns, and after suitable suggestion will continue into waking life. Posthypnotic suggestion is by some restricted to this stage, and perhaps its more striking examples do occur in it, but there can be little doubt that it also takes effect in the earlier stages.

Some authorities expand this classification to six or more stages, partly by further subdivision and partly by adding Clairvoyance, in which the subject perceives objects and events which are supposed not to be within the reach of the normal senses, and Ecstasy in which the

mind is completely turned aside from external impressions and is rapt in the contemplation of Nirvana or Heaven, according to circumstances.

Whether these conditions really occur, and if they do, whether the interpretation given them is correct, I do not pretend to decide; but I would like to point out firstly that even enthusiastic believers acknowledge the existence of an enormous amount of fraud, and secondly that a very large proportion of the phenomena can be explained by the action of suggestion on susceptible minds, and finally that in such cases there is no means of checking the truth of what the medium says. Why, then, should another unknown quantity be introduced into a problem in which there are so many already?

We believe that the mind is a function of the brain; but physiologists are not even yet unanimous as to whether the brain acts as a whole or whether the different parts have different spheres of influence. The latter is the view more commonly held, but the localisation of the different qualities of the mind is by no means settled, and there are relatively enormous tracts of cerebral cortex unexplored as Sahara.

Leaving the question of localisation aside, how does a brain-cell secrete or excrete an idea or part of an idea? When this has been discovered we shall know what life itself is, that mysterious quality which we know exists for a time in every animal body, but the nature of which is incomprehensible. Every cell in the body has its individual life distinct from that of the whole, in continuity with the life of the primordial protoplasm long before the body was formed, and persisting for indefinite periods after the individual has ceased to exist. We know but little of the structure of our bodies, less of the functions of its different parts, and practically nothing of the mind, its capabilities and limitations; but to postulate supernatural causes for natural phenomena is merely to revive the old belief in witchcraft under new names. Every day miracles are performed in chemistry, physics, engineering and

other sciences by the help of newly-discovered functions of familiar objects, why then attribute what now appears miraculous in the mind to causes outside itself?

All that can be safely stated about hypnosis then is that it is a condition of the subject's mind, in which the relations between it and the body are altered. The most striking feature in it is the dissociation of ideas, which allows of the abstraction of some, the insertion of others, and the modification of most, through the suspension, more or less complete, of the attention. To give a concrete illustration of these rather difficult abstract ideas, imagine an electromagnet such as is used in dockyards; while the current is running through it, it will hold a heterogeneous collection of scrap iron and rubbish, all firmly united into one mass; but when the current is switched off it is possible to sort out the rubbish, and to rearrange the pieces of iron in any way desired. If, however, any bits of steel are present they retain their magnetic power, and still cling to their iron neighbours, irrespective of the current in the main circuit. So in hypnosis the attention can be switched off, leaving the contents of the mind more or less at the mercy of suggestion; but certain groups, such as religion, morality, &c., seem to possess a nucleus of steel, for no amount of hypnotic suggestion will affect them any more than argument or instruction in the waking state.

Discussion has raged furiously as to whether crimes can be committed through the agency of suggestion, and authority is still divided on the question. Bernheim and others have succeeded in their laboratories in getting subjects to commit imaginary crimes, such as stabbing a companion with a paper-knife. But when their experiments are repeated, it is obvious that the subject realises that he is only acting a part, which he endeavours to fill as dramatically as possible. Subjects invariably refuse to carry out suggestions to which they really and conscientiously object, even when of a trifling nature, so the danger of producing criminal results may be considered quite in-

finitesimal, except perhaps in those who in the waking state would have no objection to slitting a throat or picking a pocket.

The state of hypnosis can be produced in numberless ways, provided certain conditions are favourable. Active opposition on the part of the subject renders a first attempt almost invariably unsuccessful. After deep hypnosis has once occurred resistance does not matter so much. Both mental and physical quietude are of great assistance, and likewise expectation and fixity of attention. How these conditions are attained is of minor importance. The Gymnosophists were believed to reach the stage of Ecstasy by contemplating their navels; mesmerists employed mechanical means and passes; Liébault and the Nancy school used only verbal suggestion combined with local touches; Mrs. Eddy attained exactly similar results by the repetition of formulæ less logical and less consequent than the incantations of Babylonian sorcerers; religious devotion can show the wonders of Lourdes and elsewhere.

The only permanent feature in all these various manifestations of the power of mind over matter is the capacity of the subject for receiving and accepting suggestions. The function of the operator appears to be merely that of a director; not that this is a position devoid of responsibility and requiring no special gifts or knowledge; for nowhere are skill, tact, confidence and probity so essential as in the practice of hypnotism.

Most if not all those who explore the mysteries of the mind consider their chief object the curing of bodily diseases, whether they believe in their existence or not. As the proverbial saying goes, "Every man, by the time he reaches forty, is either a fool or a physician," and the same applies to the superior sex with even greater truth. But unless the operator knows exactly what is the matter, irreparable damage may be done by obliterating the danger signals which kindly nature provides for the warning of her children. In milder instances tissues may be

strained or injured by being required to bear excessive or unaccustomed burdens. For a time the short-sighted may be persuaded to exert their powers of focussing and to read at a greater distance, just as a weakling may be forced to perform feats of strength. In both cases the action is purely muscular, the result is fatigue with the necessary chemical changes which attend muscular exertion, and if persisted in may end in complete exhaustion. The absence or diminution of the sensation of tiredness is only of importance in masking the dangers of the condition. Pain is not a disease, it is only the perception in the mind of some abnormal condition in the body. It can only be imaginary in the sense that all the perceptions of the mind are images. But it may be aroused either by central or peripheral stimuli. If the pain is of central origin—*i.e.*, arises in the mind without an external cause—no harm can generally be done by removing it through suggestion. If, on the other hand, there is an external cause, removing the sensation has no more effect on the cause than hanging up the receiver has on the temper of the man at the other end of the telephone. Of course suggestion may justifiably be used like any other anodyne when the source of the pain cannot be affected or is about to be removed.

At this point Christian Scientists come into direct conflict with the prevailing views of the medical profession and with the experience and interests of the public. I do not propose to attempt on this occasion to refute all the fallacies of their tenets and syllogisms. If these are carried to a logical conclusion, no Christian Scientist can believe that anything abnormal is happening at the present day to our state of civilisation; for war is a medley of evil, disease and death silhouetted against the brilliance of the chivalry, constancy and courage of many of those engaged in it. Even in times of peace the doctrine of the non-existence of evil, disease and death had to be modified by the omission or suppression of the last, more especially when Mrs. Eddy herself paid the debt of

Nature. Evil may perhaps be ignored, on the theory of Dr. Pangloss that all is for the best in the best of possible worlds. But the ignoring of any except the milder indispositions has serious effects both on the individual and on society. Many deaths have been directly caused by refusing to employ methods whose utility has been proved, while treating the symptoms of serious illness as having no existence. In the case of infectious and contagious diseases danger threatens not merely the sufferer himself but also the public at large, for the mere assurance that smallpox, &c., are only creations of the false human consciousness will not prevent frail human bodies from contracting them, whatever the indwelling spirit may do.

It is, therefore, desirable as the British Medical Association recommended, that the practice of hypnotism as a cure for disease should be left to those who have been trained in the study of the protean monster. For the statements of the patient and his friends, unless supported by other evidence, are usually as valuable as the suggestion made recently by a man suffering from stone in the kidney, that he might have got it from drinking out of a shallow stream; and in hypnosis or trance the veracity of the subject depends largely on his histrionic qualities.

Nowadays very few will deny that hypnotism has its uses in medicine; but, like Prussic acid, digitalis, or chloroform, it must be used with extreme caution, only on fit and proper subjects, and only for definite purposes, to the attainment of which it is adapted. Hypnotism is no panacea. There are countless conditions which it cannot affect in the slightest degree; and frequently, in cases where it might do good, the patient is so full of his own suggestions and those of his friends that the treatment fails, just as a little whisky, which might save a pneumonia patient, is useless if he is already saturated with alcohol.

The best way to make use of this method of treatment

varies with the patient, and to a slight degree with his complaint. Some are relieved by a quiet chat, even if not completely cured; others will become somnambulists and carry out every suggestion except the one that is of most importance; some are relieved permanently, others relapse quickly. In many of the latter class the relapse is due to subsequent suggestions obliterating the curative ones; this may be guarded against by deliberately suggesting to the patient that he cannot be influenced by suggestions arising from any other source than the operator.

While it is desirable to restrict the practice of hypnotic treatment, the study of the phenomena and familiarity with the facts of the hypnotic state cannot be too widespread. Hypnotism and suggestion enter into many knotty problems in psychology and other sciences, and afford at least a starting point for their unravelling. The more that is known about the subject the less awe and mystery it will occasion, and the less opportunity there will be for designing persons to take advantage of their more gullible neighbours. The Society for Psychical Research has done much good work in trying to raise the veils that shroud so many of the mysteries of life; and its name indicates the lines on which alone real advance can be made; Research, not theory, is the road to Science.

ART. IV.—*Post-mortem Findings in Two Cases of Hectic Fever.*^a By SIR JOHN MOORE, M.A., M.D., M.Ch., D.P.H. Dubl.; D.Sc. (*Hon. Causâ*), Oxon.; F.R.C.P.I.; Honorary Physician to H. M. the King in Ireland; Senior Physician to the Meath Hospital and County Dublin Infirmary.

DURING the past autumn two cases of hectic or habitual fever came under my observation at the Meath Hospital and County Dublin Infirmary. In neither case was a very accurate diagnosis made during life. But, fortunately,

^aRead before the Section of Pathology in the Royal Academy of Medicine in Ireland on Friday, November 17, 1916.

I was able to clear up most doubtful points in the light of the *post-mortem* findings. For the autopsies I am indebted to Dr. R. M. Brontë, the Pathologist to the Hospital. The cases are as follows :—

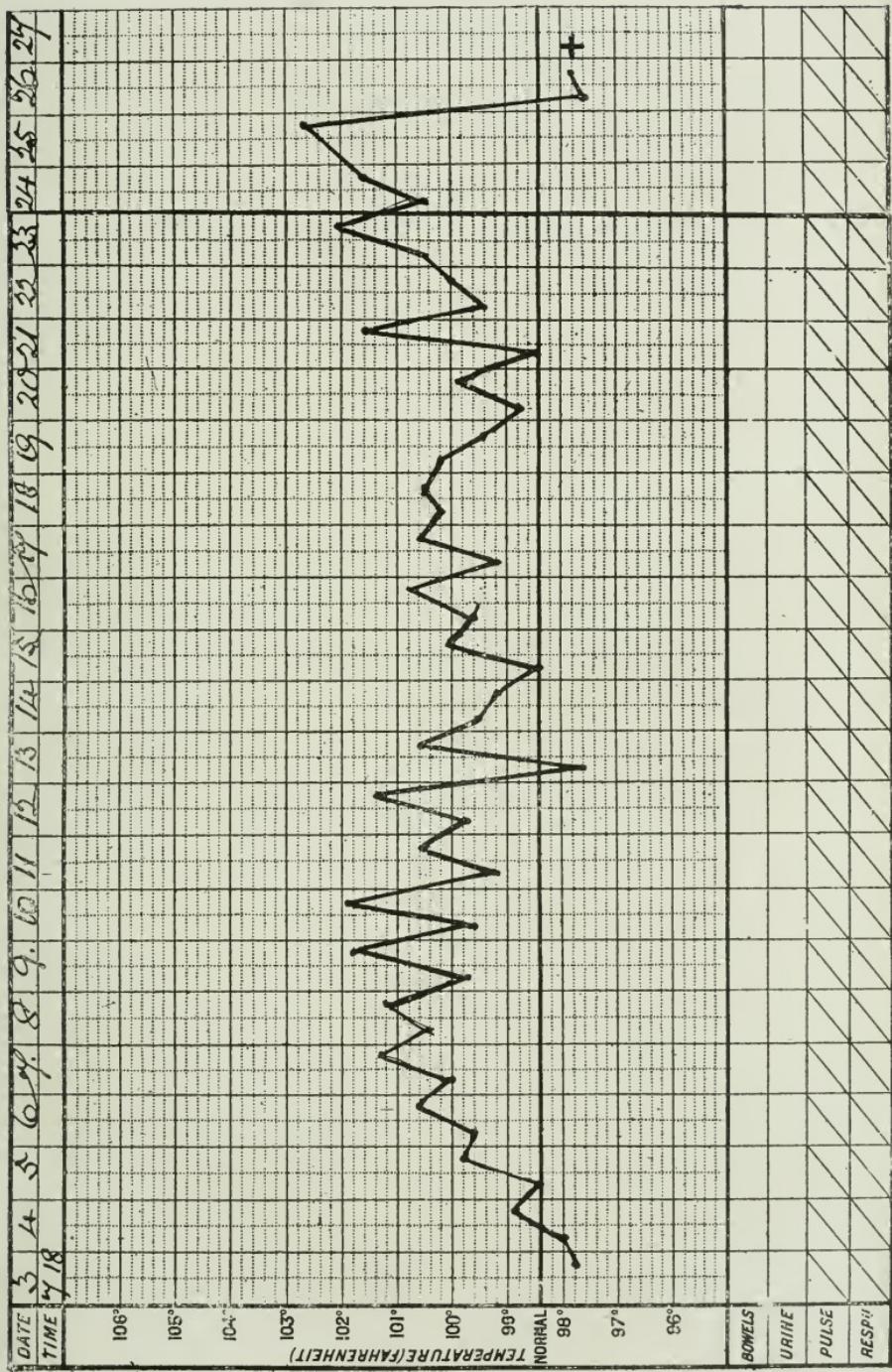
Pyæmia—Multiple abscesses in many viscera.

CASE I.—On September 3, 1916, Private A. E. B., aged 29 years, of B. Squadron, 19th Hussars, was admitted to hospital from the Hospital Ship “Salta.” He seemed to be very ill and was much depressed. The Staff Sister of the Military Ward handed me the following memorandum : “ Aug. 30, '16.—Pte. B. apparently has a cholecystitis. Two ‘ Widals ’ negative. Fæces negative—urinalysis also negative. Leucocytosis, 11,300 on admission. Very tender over left kidney. Temperature 99° to 100° in the morning, and 102° to 104° in the evening. I should like to hear how he gets on.—C. B. Waite, Capt. C.A.M.C., No. 7 Can. Gen. Hospital, B.E.F., France.”

The patient had been many years in the Army, having enlisted at a very youthful age, to which he had apparently added several years when making the necessary statement on enlistment. The family history included at least one case of tuberculosis in a near blood relation—his father died of pulmonary consumption. The personal history pointed to a past alcoholic excess and to an attack of dysentery about seven years ago while he was on active service in South Africa.

On admission Pte. B. weighed only 7st. 11lbs., although he was rather above medium height. He stated that he had lost much weight since his illness began some weeks previously. One day he casually remarked that he had never quite recovered from the kick of a horse in his “stomach” several years ago. On the other hand Mr. George J. MacMunn, M.R.C.S. Eng., the medical attendant of his family at Croydon, Surrey, in a letter of inquiry about him, stated that when he saw him last before he went out to France he was in perfect health, “although he had a tubercular tendency, all his family have it.”

September, 1916.



At the time of Private B.'s admission to hospital he was fever-free, but his pulse was very quick—110 to 120, and the respiration rate ranged from 24 to 32; the bowels were regular, and the urine was free from albumen and sugar. There was a peculiar bronzing of the skin, but no decided pigmentation about the nipples, or in the armpits. The conjunctivæ did not present a pearly appearance. There were no bluish markings on the tongue or buccal mucous membrane. He had no cough or expectoration.

There was a certain tenderness on pressure in the appendix region, with dulness on percussion, rigidity of the neighbouring muscles (vital ankylosis), and a fulness. Suspecting mischief in or near the appendix, I asked my colleague, Mr. William Taylor, to see the patient, but he came to the conclusion after a day or two that no operation was indicated for appendicitis or other lesion.

The temperature now resumed the character described in Captain Waite's note—it was septicæmic, with morning remissions and evening exacerbations. The man's appetite was very bad, wasting went on apace, and there was a terrible daily ebbing of strength. Physical examination of the chest revealed extensive congestion of the lungs posteriorly. Dry cupping to relieve the pulmonary stasis brought out intensely dark markings. Also numerous petechiæ developed on the arms and wrists. The urine now contained a mere trace of albumen, but was normal in other respects. Dr. Boxwell examined the blood on September 16th, and reported that the red cells numbered 3,840,000 per cubic millimetre, the white cells were 20,000 per c.mm.; and that there was a decided polymorphonuclear leucocytosis.

Although the patient had neither cough nor expectoration I could not, in view of the family and personal history and in presence of the habitual fever, absolute loss of appetite, and extreme wasting, lose sight of the probability of a generalised tuberculosis. In any case I looked upon him as a dying man, and on conveying this opinion to the

Military Authorities, they very kindly arranged that the patient's mother, sister and brother—the last-named a leading seaman in the Royal Navy—should come to Dublin to visit him.

On September 26th the man was evidently dying. Temperature had fallen suddenly during the night from 102.6° to 97.5°, while the pulse ran up to 140. In the evening of the 26th temperature rose only to 97.8°, and the pulse was 144. He died on the early morning of the 27th.

It seemed to me most desirable to clear up the diagnosis in this case by a *post-mortem* examination, and to this the relatives consented. The case proved to be one of pyæmia.

Dr. Brontë examined the body about 12 hours after death.

The heart showed a slight amount of fatty degeneration. The left pleura had been the seat of a chronic inflammation, leaving some adhesions, which, however, were not extensive. The anterior portions of both lungs were extremely emphysematous; their posterior portions were congested and œdematosus—small multiple abscesses were found in both lungs.

The left kidney contained a large dépôt of pus, which did not communicate with the renal pelvis. In the right kidney there were a few small pyæmic abscesses. The liver and spleen were enlarged but otherwise normal. The portal blood was sterile.

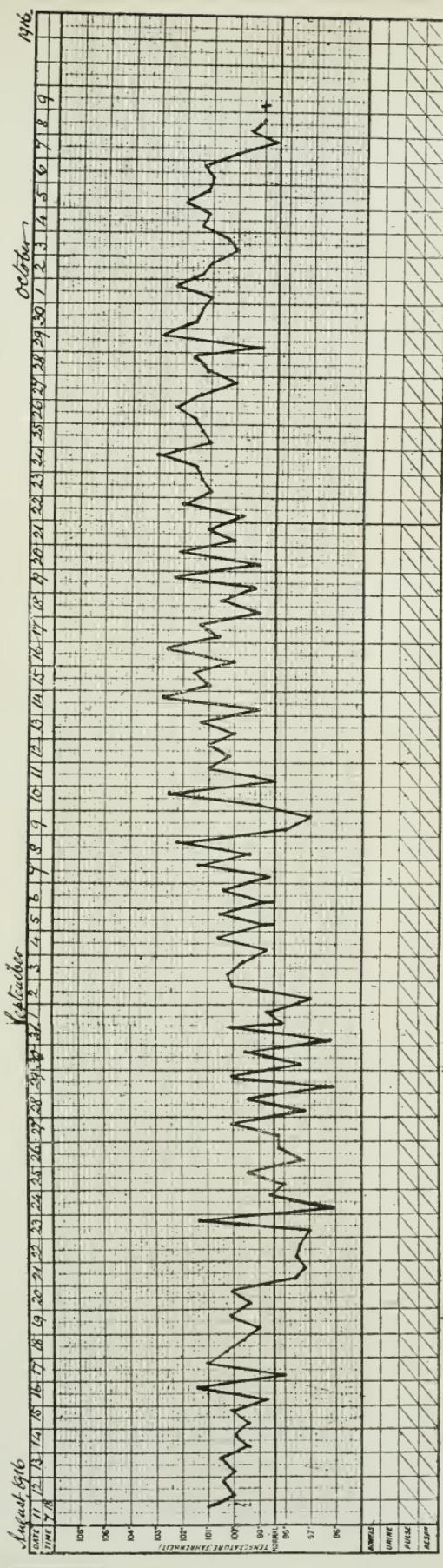
The vermiform appendix was gangrenous. It had been the seat of a chronic suppuration, and the pus had escaped into the pelvis.

Cultures from the various abscesses showed only *staphylococci*.

Tubercular Pleuritis : Disseminated Tuberculosis.

CASE II.—J. C., a young man aged 22, a bootmaker by trade, was admitted to hospital on August 11, 1916, suffering from fever (101° F.) and pain over the lower part of the back of the chest on both sides. The illness

CHART II.—*J. C.*, male, aged 22. *Tuberculosis disseminata*.



had come on gradually and insidiously. The pulse-rate was 100 to 108, and the respirations were 28 to 30 per minute. The bowels were constipated—a condition which was constitutional with him, but his appetite was fair. A coated tongue, with red tip and edges, and a somewhat enlarged spleen, suggested enteric fever. There were no rose-spots, and the temperature remained only moderately high— 99° to 101.5° . The urine was clear, pale, acid in reaction. Its specific gravity was low, 1010; it was free from albumen and sugar.

Physical examination led to a diagnosis of right pleuritis with commencing effusion. On August 15th, evidence was forthcoming of a considerable effusion into the right pleura and a moderate effusion into the left pleura. There was no œdema over the right side of the chest, but the occurrence of rigors and the temperature-ranges suggested an empyema. I asked my colleague, Dr. Boxwell, to see the patient with the view of exploring the pleura, but he advised against tapping it as the amount of effusion was not causing distressing symptoms. At no time had the patient any cough or expectoration, and so we were debarred from making a bacteriological examination.

Meanwhile the heart was daily becoming weaker and its beat more frequent. Wasting set in and a general failure of strength, accompanied by an increasing tendency to tremor on any muscular movement. On August 21st a further complication appeared. Intense pain in the right foot, most intense in the little toe, was complained of, interfering with sleep. The foot was pale and cold to the touch, and the little toe was already discoloured, as if local asphyxia was present. In a day or two it was quite clear that the condition was one of dry gangrene. At Mr. William Taylor's suggestion, the toe was lightly painted with tincture of iodine, in addition to friction and envelopment in wadding—means which had already been adopted to combat this serious complication.

On September 1st, a distinct pleural friction sound was audible over the base of the right lung; the percussion

note was dull and the breath-sounds were diminished. The continuance and the character of the pyrexial temperature suggested the presence of an acute miliary tuberculosis, but there was no sputum, so that it was not possible to verify this view of the case—so far as the lungs were concerned—by a bacteriological test.

The leading features in the case during September were increasing weakness and tremor, progressive loss of flesh, and the occurrence of epileptoid attacks at intervals of several days. For the last complication, as I may call it, a modification of Brown-Séquard's compound bromide mixture for epilepsy was prescribed and taken with benefit for some time. For constipation also a cascara sagrada mixture with tincture of nux vomica was ordered.

At the beginning of October the patient was failing fast. His breathing became laboured, and fine and coarse crepitating râles developed all over the chest, particularly at the back. The patient grew more and more drowsy, and finally lapsed into unconsciousness. Death supervened on the early morning of Monday, October 9th.

The *post-mortem* examination was made by Dr. Brontë, who kindly gave me the following brief summary of the findings :—

Acute pleurisy on both sides; disseminated tuberculosis of both lungs; the left lobe of liver overlapped, and was adherent to, the spleen; the latter organ showed a large area of caseation. There was no enlargement of the mesenteric or mediastinal glands. The diaphragm and pericardium were studded with tubercles.

A glance at the temperature charts in the two brief clinical records, which I submit to the Section of Pathology, will show that they resemble one another in the irregularity of the temperature ranges and the persistence of a febrile condition—well-known characters of habitual or hectic fever, synonymous terms derived from Latin and Greek respectively. In each patient this characteristic type of pyrexia was caused by a specific infection—pyogenic in the first case, tubercular in the second case.

When Private B. was admitted to hospital, I came to the conclusion, after careful investigation, that he was suffering from appendicitis. That was the reason why I called Mr. Taylor into consultation. When the localising symptoms and signs subsided, and on learning more about the patient's family history, I frankly admit that I changed my opinion and thought that a disseminated tuberculosis more likely was present. The *post-mortem* examination proved that the former diagnosis was much nearer the truth. I may mention that the relatives were much relieved, even gratified, to learn that the autopsy lifted the incubus of a familial tubercular tendency which had been weighing heavily on their minds. Here, then, is a practical illustration of one of the uses of a pathological investigation into the cause of death.

In the second case the *post-mortem* findings merely confirmed the diagnosis of a disseminated tuberculosis which had been made from the history and progress of the case. The absence of cough and expectoration until the final stage of an illness extending over many weeks is noteworthy.

LITERARY NOTE.

MESSRS. BAILLIERE, TINDALL & COX, 8 Henrietta Street, Covent Garden, London, announce that they have in preparation for early publication a work which will be of extreme interest and value to those who have under their care not only civilians but soldiers who have been physically broken in the wars. It is entitled "Physical Remedies," and presents in a convenient form the information which is necessary for practical treatment by mechanical apparatus, exercises and medical gymnastics, heat and cold baths, by electricity and radiation, by massage, as well as by medicinal waters in the British health resorts. The author is R. Fortescue Fox, M.D. Lond., M.R.C.P., M.R.C.S., &c. The same publishers are issuing within the next few weeks a work for general practitioners, giving all the important points for the study of the endocrine glands, entitled *The Organs of Internal Secretion : Their Diseases and Therapeutic Application*, by Ivo Geikie Cobb, M.D., M.R.C.S.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Annual Report of the Local Government Board for Ireland for the year ended 31st March, 1916. Presented to both Houses of Parliament by Command of His Majesty. Dublin : Printed under the Authority of His Majesty's Stationery Office by A. Thom & Co., Ltd., Crow Street. 1916. 8vo. Pp. lix.

WAR TIME economy has told sorely upon the dimensions of this, the forty-fourth Report under "The Local Government Board (Ireland) Act, 1872," 35 & 36 Vic. c. 69. It consists of only 59 large octavo pages—all appendices, "Orders," circulars, reports and tables being omitted. But this wholesale cutting down has in no wise damaged the Report, which is full of interesting and important matter relative to Local Government and, in particular, to Public Health.

By the "Elections and Registration Act, 1915," which received the Royal Assent of July 28, 1915, the statutory elections of county and borough councillors, district councillors and guardians due to be held before the 1st day of July, 1916, were postponed for a year, the term of office of existing councillors and guardians being extended accordingly. In the autumn of 1915, the Local Government Board received a number of inquiries as to what course was to be taken in regard to the preparation of the register for the year 1916, in view of the fact that the preliminary steps for that purpose would have then shortly to be taken. The matter was set at rest by "The Parliament and Registration Act, 1916," which provided for the further suspension of registration machinery and prohibited, until further legislation, any steps to be taken in connection with the preparation of a new register.

In this Act a provision was very properly inserted for the payment of compensation to local officers in Ireland who might suffer undue loss of income owing to its operation. It is to be remembered that in Ireland the fees under this head form a very substantial portion of the total income of such officers, and in fixing the remuneration for their other work local authorities have regard to the fees which these officers receive for their duties under the Registration Acts. Such a system strikes us as being by no means an ideal arrangement.

It may interest our readers to be reminded that the Privy Council has deemed it expedient to apply to the General Medical Council the provisions of "The Parliament and Local Elections Act, 1916." An Order in Council has been issued prolonging the tenure of office of the present Direct Representatives on the Council until December 31, 1917, and providing that no new election shall be required until next autumn.

Under the heading, "Alteration of Local Government Areas," we learn that the town of Portsteward, Co. Derry, has been constituted an Urban District, under the Public Health and Local Government Acts, as from April 1, 1916.

"War Relief" is fully considered (page vii) under the headings: "Scheme for supplying coal to necessitous persons in Dublin and district," "Assistance through Boards of Guardians to British-born wives and children of interned aliens and other destitute aliens," "Assistance to dependants of sailors and soldiers, pending the grant of separation allowance," and "Belgian refugees."

The total number of deaths in workhouses during the year ended March 31, 1916, was 9,981, being a decrease of 581 compared with the previous year. The deaths included those of 16 centenarians, one of whom was stated to have been 107 years old, while three others were believed to have reached 105 years. Tuberculosis caused 1,567 among the 9,981 deaths. This number showed a substantial decrease on that for the previous year—namely, 1,734

There is also a satisfactory decrease (of 272) in the number of deaths of infants and children in workhouses during the year under discussion (page xx).

The nursing staffs in Workhouse Hospitals consisted of 273 "trained" and 250 "qualified" nurses; 366 "nursing sisters" (Nuns) and 170 "probationer nurses."

In the course of the year ended March 31, 1916, 436,878 cases were attended at the Dispensaries, and 154,217 at the patient's own homes. These figures, vast as they are, show a remarkable diminution compared with 476,775 and 173,380 respectively in the previous year. The Local Government Board consider that these figures indicate the satisfactory condition of the health of the people, especially when read in conjunction with the statements in the Public Health Section of this Report (pages xxix, *et seq.*) showing the diminution of infectious disease during the year.

The City of Belfast seems to have anticipated the enactment of a Midwives' Act for Ireland, for the provisions of the Belfast Corporation Act of 1911 for the better control of midwives practising in that city, and the Rules and Regulations, made thereunder by the Corporation and confirmed by the Local Government Board, have been in operation since January 1, 1913. The Corporation are empowered to exercise control over the practice of the midwives, and to prohibit uncertificated persons from attending women in childbirth within the County Borough otherwise than under the directions of qualified medical practitioners. A midwives' roll was prescribed by the Statute, and the classes of persons entitled to admission thereon were specified.

Dr. Stephenson, Medical Inspector of the Local Government Board, reported favourably to the Board on the administration of the Act and Rules during 1915. At the close of December of that year there were 227 midwives on the roll. During the year the midwives had attended without "doctors" as many as 4,262 births. Strict supervision had been exercised by the Corporation officers over

the midwives and their practice. Furthermore, twenty unregistered women engaged in practice as midwives had been discovered and suitable action had been taken in their cases.

The following summary of the deaths of women consequent on childbirth in Belfast from January 1, 1913, to December 31, 1915, indicates that good results are being achieved through registration and control of midwives :—

1913 : Deaths from puerperal septicæmia, 14; in the puerperal state, 46.

1914 : Deaths from puerperal septicæmia, 11; in the puerperal state, 34.

1915 : Deaths from puerperal septicæmia, 8; in the puerperal state, 28.

The section on "Vaccinations" supplies some very interesting reading. In the year ended March 31, 1916, the Medical Officers of Dispensary Districts performed 72,958 primary vaccinations, and 2,087 re-vaccinations—75,045 in all. The Workhouse Medical Officers performed 495 primary vaccinations and 32 re-vaccinations—527 in all; and Dr. Alexander Nixon Montgomery, at the Vaccine Institute of the Local Government Board, 45 Upper Sackville Street, Dublin, did 745 primary vaccinations and 9 re-vaccinations—754 in all. The total vaccinations for the year done by the above Public Vaccinators were 76,426.

The total number of primary vaccinations performed by Poor Law Medical Officers in the year under review (1915-1916) was 73,453, as compared with 62,688 in the year ended March 31, 1915, and 59,049 in the year ended March 31, 1914. This satisfactory result is due to the firmness of the Local Government Board in dealing with a growing disposition on the part of the local authorities in many parts of Ireland to flout the provisions of the Vaccination Acts. The Letterkenny Board of Guardians in particular assumed, and persisted in, an attitude of open opposition to the law. They claimed that they were the final and

ultimate tribunal to decide as to the enforcement or not of the Vaccination Acts in their Union, and by Resolutions which were reported in the newspapers, they intimated to the public that Vaccination was optional in the Letterkenny Union District, and that prosecutions would not be instituted against persons in default. The Local Government Board repeatedly urged the Guardians to reconsider their position and carry out the Statutes, and, finding that all remonstrances were unheeded, the Board applied to the Court of the King's Bench for a Writ of Mandamus commanding them to enforce compliance with the Vaccination Acts. In the application to the Court the members of the Board of Guardians who had voted in opposition to the administration of the Law were named as special defendants in order that costs might be awarded against them. The case came to hearing before the King's Bench Divisional Court, consisting of Lord Chief Justice Cherry, Mr. Justice Madden, and Mr. Justice Boyd, and on the 16th of November 1915, Judgment was delivered in the Board's favour but without costs against the special defendants, the Lord Chief Justice stating that :—“ with regard to the question of costs—as this is the first occasion upon which it has been decided, in Ireland, that the duty of enforcing the Vaccination Acts is mandatory upon Boards of Guardians and as the Letterkenny Guardians appear to have adopted the course they did in the bona fide belief that they legally had a discretion in the matter I do not think they ought to be required to pay the costs personally. But I should like it to be understood that, for the future, if our order in this case stands, Guardians who persistently refuse to enforce the Vaccination Acts within their districts will do so at the peril of being obliged personally to pay the costs of proceedings to compel them to discharge their duty in this respect.” The decision of the High Court has been accepted by the Letterkenny Guardians, who have since carried out the Vaccination Law in their Union, and, furthermore, the pronouncement of the Lord Chief Justice in respect of costs has had a most

salutary effect amongst Guardians throughout the country.

On March 31, 1916, the provisions of the Infectious Disease (Notification) Act, 1889, were in force in 155 Rural and 90 Urban Districts, the Act having been adopted by the local authorities of these districts. Surely, the time has long since come for the extension of the Act to the whole of Ireland. The notification of tuberculosis in pursuance of Part I. of the Tuberculosis Prevention (Ireland) Act, 1908, has made steady progress, and now extends to 79 Sanitary Districts containing over a third of the entire population of Ireland. Here, again, all sanitarians must agree that no part of this country should remain outside the scope of the Act, notwithstanding its many imperfections.

The misapprehensions with regard to the notification of Tuberculosis which were prevalent at the time when statutory facilities were first afforded are gradually disappearing and some local bodies have passed resolutions in favour of the general introduction of the system. The Local Government Board continue to urge on Sanitary Authorities who have not adopted Part I. of the Tuberculosis Prevention (Ireland) Act, 1908, the advantages to the community to be derived from the notification of Tuberculosis, and to explain the means by which the information obtained might be utilised in connection with the administration of County schemes for the treatment of Tuberculosis for the benefit of patients and for the early diagnosis of the disease among contacts. The adoption of notification of Tuberculosis is specially desirable in the County Borough of Cork, where the incidence of phthisis is particularly heavy.

It would appear that notification is not infrequently delayed until the later stages of the disease. In the interests alike of patients and of the general community, it is important that notification should take place before the disease has reached an advanced stage, and it is to be hoped that Sanitary Authorities will bear this consider-

ation in mind in connection with their administration of Part I. of the Tuberculosis Prevention (Ireland) Act, 1908.

This analytical review has run to such length that we refrain from noticing several other points of interest in the Report, notably the account given of the Public Health treatment of Tuberculosis, under the headings : appointment and the work of tuberculosis officers, approval of sanatoriums, and other institutions for the reception of insured persons suffering from tuberculosis, approval of domiciliary treatment, distribution of the "Sanatorium Grant," of which the share accruing to Ireland was certified to be £145,623, the Exchequer grant in aid of the treatment of tuberculosis, the progress of County Schemes. Of these the most comprehensive in Ireland, and one of the most complete in the United Kingdom, is that based on an agreement between the Belfast Corporation and the Belfast Insurance Committee, whereby the former body undertakes to provide treatment for insured and exempt persons in consideration of the fund available for sanatorium benefit being handed over to the Corporation. This agreement was completed on January 18, 1916, and the scheme came into operation on February 1, 1916. It provides for institutional, dispensary, and domiciliary treatment, not only for all insured and exempt persons, but also for all residents in the city suffering from tuberculosis.

By the Notification of Births (Extension) Act, 1915, the procedure of adoption by local authorities was abolished, so far as County Boroughs and Urban Districts are concerned, and since September 1, 1915, the requirements of the principal Act have been obligatory in all such districts. Under the adoptive system Dublin County Borough and Belfast County Borough were the only districts in which the Act had been put into force in Ireland.

The incidence of Infant Mortality in Urban Districts in Ireland is considerable, and affords ample scope for a substantial reduction. The Local Government Board recognise that the character and organisation of schemes for maternity and child welfare must vary according to local

conditions, and particularly with the size of the Urban District, but the general outline of a comprehensive scheme should, in the opinion of the Board, extend to arrangements before, at, and after birth, and should not only include the care and supervision of infants in the first year of life, but aim at securing improved ante-natal and natal conditions, as well as making provision for children up to the age of five years.

The problem of protecting infant and child life is one which, at the present juncture, deserves the serious attention of local authorities, and with a view to affording an additional inducement to remedial action, a grant of £5,000, in aid of approved schemes for maternity and child welfare, has been included in the Estimates to be submitted to Parliament in respect of the coming year. The terms of the proposed Regulations governing the distribution of this grant are in course of preparation, and have formed the subject of correspondence with the Lords Commissioners of His Majesty's Treasury. The Urban District Council of Newry have already submitted a scheme, of which the Local Government Board were able to approve, and several other Councils have been in communication with the Board in regard to the formulation of arrangements.

Lastly, we may mention as a matter of local interest to residents in Dublin that during the year with which the Report deals, the Local Government Board sanctioned loans of £7,100 and £24,400 respectively to the Corporation of Dublin for the acquisition of the lands known as the Spitalsfields Area, and for the erection of houses on the Ormond Market Area.

In the face of all the foregoing activities it can hardly be said that the Local Government Board for Ireland is either a sleepy or a powerless bureaucracy.

J. W. M.

The Medical Entomology of Salonica. By TEMP. LIEUT. COL. ANDREW BALFOUR, C.M.G., M.D., R.A.M.C. London : The Wellcome Bureau of Scientific Research. 1916. Pp. 25. Figs. 31.

THE address which Andrew Balfour delivered to the Salonica Medical Society on the insects of medical interest in that part of the War area, has been reprinted by the Wellcome Research Bureau, for distribution to members of that Society, and is offered to any medical officer engaged in sanitary work at the present time. With his accustomed clearness and humour Colonel Balfour describes the life history and adult forms of those insects, winged or wingless, which bite men and horses, or which in other ways carry infection. His paper includes the house-fly and bluebottle and their relations, of which a few bite, and others readily carry infection ; the mosquitoes, the biting midges and sand-flies, Phlebotomus, the horse-flies and other large blood-suckers ; and the wingless parasites, lice, fleas, bugs and itch mites.

The illustrations are supplied by the Wellcome Bureau, and are clear and good ; and the pamphlet altogether gives in a thoroughly interesting way much information about a subject of the utmost importance in Preventive Medicine.

Collected Papers on Circulation and Respiration. Second Series. Clinical and Experimental. By SIR T. LAUDER BRUNTON, Bart., M.D., LL.D. (Edin. and Aberd.), M.D., Hon. (Dubl.), F.R.C.P., F.R.S. ; Consulting Physician and late Lecturer on Pharmacology and Therapeutics to St. Bartholomew's Hospital. London : Macmillan & Co., Ltd.

THIS is a veritable store house of interesting papers containing for the most part observations and thoughts on questions of practical medicine. It reaches us but a few weeks after its distinguished author has left us in the

body, but his spirit and methods will endure, and in future generations we feel sure that he will be regarded as one of the most brilliant pioneers in the investigation of the physiological action of drugs by actual animal experimentation, and in the application of the results obtained to the treatment of disease. Before the war one seemed to see the possibility of great advances along the lines that Sir Lauder Brunton had pursued almost single-handed for a life-time. Now, alas! everything, save war itself, seems to be at a standstill; but in the subsequent renaissance which we dimly vision there lies all hope of genuine scientific therapeutic progress.

With many of the present papers the regular reader of medical journals will be already familiar, while some of the observations recorded in the articles of earlier date have already become a part of current medical knowledge and practice. There is not one out of the entire 68 papers which comprise the volume that does not bear careful reading, and the group as a whole cannot fail both to stimulate one's own mind to make fresh observations, and also to excite wonder at the wide outlook of the author. Perhaps one of the most interesting of the entire collection is the short note on "The Use of Strychnine as a Hypnotic." It is unnecessary to specify others. We recommend our readers to procure the volume itself, and when time permits to read an article in it till the book is ended.

Diseases of the Throat, Nose and Ear. By W. G. PORTER, M.B., B.Sc., F.R.C.S. Ed.; Surgeon to the Eye, Ear and Throat Infirmary, Edinburgh, &c. Second Edition, fully revised for the Author by P. McBRIDE, M.D. Ed., F.R.C.P.E. Bristol : John Wright & Sons, Ltd. 1916. Demy 8vo. Pp. xvi + 280.

WE had the pleasure some years ago of reading and commenting on the first edition of this manual, and we

have little to add to our former praise of the book, as it remains in the same form and has the same scope. However, it may be well to recapitulate some of the best points noticed in the work.

The greatest difficulty confronting the student and practitioner in this department of surgery is the manual dexterity necessary to bring the parts into view, and the author has been at great pains to explain the ground-work of examination by text and diagrams. This is done in a very clear and concise manner, and should render the task of the beginner in acquiring the technique easy, if he will carefully digest the advice given, and the methods suggested for overcoming the various difficulties always met with.

The introduction of coloured drawings is very useful as they are confined to the more common forms seen, and not to rare and out-of-the-way cases. A great deal of information is compressed within the small compass of the book, and we will certainly recommend it to students as the best small book on the subjects of which it treats.

In conclusion, we would like to echo Dr. McBride's hope that Dr. Porter will be spared to return to his home work when the war is over.

S. H. L.

The Healthy Marriage: A Medical and Psychological Guide for Wives. By G. T. WRENCH, M.D., B.S. (Lond.); Past Assistant Master of the Rotunda Hospital, Dublin, &c. Second Edition. London: J. & A. Churchill. 1916. Pp. 300 + viii.

WE accorded this work a most favourable review when it was first published. There is no change in this (2nd) edition, which appears at an opportune time when the air is full of hasty marriages which we can only hope will prove to be healthy.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PLICA POLONICA.

By JOHN KNOTT, A.M., M.D., Ch.B. & D.P.H. (Univ. Dub.);
F.R.C.S.I.; M.R.C.P.I.; M.R.I.A.; &c.

RECENT events have tended, and very impressively, to concentrate a great deal of the attention of the civilised world on the past history, as well as on the present condition, of Poland and its people. That Niobe of nations has never, probably, in the whole course of her centuries-long political and social agony, called so loudly—and so meritoriously—to heaven, for justice and protection, if not for revenge, as it has been obliged to do by the harrowing events of the current war. While Ireland has been placed within easy reach of the realisation of the national ideal for which the majority of its inhabitants have so long prayed and dreamed without satisfactory visible result, Poland has been even more thoroughly crushed beneath the iron hoof of a new invader than at any other period of her peculiarly unhappy history.

One of the results of this colossal struggle of the nations and one of the very few which suggests even a very faint silverying of the storm-cloud—over at least the receding facet which must long remain visible to our heavily-laden posterity—will inevitably be the awakening of an intensified intellectual interest in the geography and ethnology of existing European nations; and in the social and physical, as well as ethical and political, influences which have contributed by their individual and collective—parallel and intersecting, coincident and conflicting—courses of advancement and of retrogression, to the genesis of the present respective states of evolution and devolution, that go to form the gruesome Continental picture which now horrifies all civilised, cultured, and philanthropic spectators, wherever located on the surface of our planet. It has been said by the wise and the inspired of the olden time that the evil practices of tribes and nations would always surely lead to terrestrial punishment: in the forms of war, and its in-

evitable sequelæ, pestilence and famine. And we have now been treated since the commencement of the present unique (exterminating or enslaving) international contest, to a correspondingly distracting tornado of wild and whirling opinions, expressed in extremely suitable phraseology of wild and whirling words, regarding the Providential reasons and political abuses which had contributed by their focal concentration to the genesis of the current cyclonic outburst of all conceivable elements of mutual destruction: in the heavens above, on the earth beneath, and in the waters under the earth.

It became increasingly fashionable down through the wonderful century last past to trace everything back to undeniable *material*—and therefore *secondary*—causes, and then exhibit the result of the exploration with copious self-assertion and self-applause. When the scientist had discovered the ovum with the help of his microscope, he knew he had done what his ancestors had not (and could not have) done—and was far too highly satisfied to wait to ask who made the original egg, or the ovarian organ which had produced it: or to tease himself by trying to solve the venerable conundrum as to whether egg or bird (or insect or reptile) had appeared first in the dawn of “natural” history. And there are certain social conditions and political procedures of which the enforced maintenance will, in every case, sooner or later, prove productive of troublesome and mischievous consequences. The hygienic history of Poland will be found to furnish an instructive and interesting item which I have never seen alluded to in the current comments innumerable on the political woes of that country—on which it seems to me to throw some very lurid beams of illumination. Historians have recognised that the Polish aristocracy were the most exclusive in the world. Discriminating visitors to the Kremlin of Cracow, who have inspected the rock-hewn receptacles which hold the gorgeously-bejewelled sarcophagi of its former residential Kings and Archbishops, will find little difficulty in believing that historic fact—after having seen the poverty and squalor of the country’s marshes and forest borders. No more direct intercourse between the nobility and peasantry than between the Jews and Samaritans of Biblical times!—a fact, too, which provided easy admission to the unutterable squalor of the untaught and un-cared-for peasantry—infinitely more despised and ill-treated than the cattle—and will also explain the endemic diffusion of the loathsome

Plica Polonica—which at last elicited the following self-explanatory international appeal—with description (original):

Ita autem D. Laurentius Starnigelius, Academiæ Zamosciensis Rector, et Eloquentiæ Professor, ad Academiæ Patavinæ Professores Medicos scribit, ult. d. Octobr. Anni 1599.

"Excellentes et Magnifici Domini, amici carissimi et observantissimi. Pro conjunctione eâ quæ nobis in ultimâ Sarmatiâ versantibus, propter optimarum artium commune vinculum cum Excell. et Magnif. D.V. intercedit, novellæ Zamoscensis Academiæ Rector, scribendum esse duxi, ad Excell. et Magnif. D.V. vetustate quidem et præstantia, nobilissimæ Academiæ Patavinæ, claros, eruditione tamen ac usu majores et clariores. Caussam autem scribendi attulit mihi novitas apud nos morbi et summa eis medendi difficultas. Peto, ut epistolam hanc meam et legant benevolè, et lecta consilium judiciumque suum amicè prescribant; qualem morbum existiment, quæ præcepta dent; cuiusmodi medicinam faciendam putent ejus depellendi. Res ita habet. Inter Ungariam et Pocutium, provinciam regni Poloniæ, quæ montibus, ex quibus fluvii complures erumpunt, inter se distinctæ sunt, eveniebat ut plerisque hominibus unus et alter cirrus excresceret cum vicinis sibi crinibus, in se introrsus implicatus et densus. Et tum quidem nullâ re molestus erat. Nunc cerpere coepit is morbus, et latè per totum Regnum Poloniæ, magno omnium malo, magnoque cruciatu divagatur. Infringit ossa; laxat artus; vertebras eorum infestat; membra conglobat et retorquet; gibbos efficit; pediculos fundit; caputque aliis et aliis succendentibus ita opplet ut nequaquam purgari possit. Si cincinni radantur, humor ille et virus in corpus relabitur, et affectos, ut supra scriptum est, torquet: caput, pedes, manus, omnes artus, omnes juncturas, omnes corporis partes exagitat. Expertum est, qui tales fasciculos implicatorum perarctè inter se crinium deraserint, eos oculis capi; aut defluxibus ad alias partes corporis gravissimè torqueri. Purgationibus usitatus si illi medeare, ægrescit et exsuperat magis, quod noxios humores nequeat superare purgatio, sed commotos per totum corpus disperget; tanto enim dolore omnium deinceps membrorum hac affecti peste ardent, ut ad cruciatus acerbitatem nihil possit esse acrius. Maximam partem fæminas invadit; viros etiam, qui Gallicum in morbum propendent; tum liberos ab his procreatōs qui lue Gallicā fuerunt infecti. Eos etiam, qui porriginem capit, quam vulgus tineam vocat, medicamentis repercutientibus repres-

serunt; præterea fæminas, quæ menstruis temporibus non satis purgantur. Quarum quædam, dum in ætate adolescen-
tiore fluxum sanguinis per nares, menstruo modico, nimis profusum, identidem tabuisserent; ætate proiectiore, eo fluxu per nares cessanti, in ipsum morbum cirrorum delapsæ sunt. Quidam, quanquam perrari, cùm aliquot annis hoc genere morbi cruciati exagitatique fuissent, nec caput raissiasent; vexationemque ejus omnem, et pædorem et spurcitudinem, non sine summâ molestiâ, et nauseâ pæne intolerabili pertulissent, tandem virulentis illis cirris decidentibus convalevere; maxima tamen pars perit. Quæsita sunt et tentata varia remediorum genera, sed nullum est satis idoneum adhuc repertum; quæsitu etiam vis et natura morbi, et caussa; sed ne de hac quidem etiamnum quidquam liquet. Homines agrestes, Erinacei riserpero circumligatione relevari compererunt; et advertendum penitus morbum, ex Erinaceo ipso escam sibi conficiam; sed ne hoc quidam tanti est. Lotionem præterea sibi parant ex decoctione foliorum Vrsi brancæ, quâ cum abluunt caput, cirri, de quibus est supra scriptum, erumpunt, magnaue vis pediculorum. Cum exhalatione fuliginosâ, ex quâ nascuntur crines, communicat, videturque cum tineâ affinitatem habere; atque cruciatu ossium, cum Gallicâ lue; cum arthritide, artuum dolore; cum spasmo, contractione miserabili membrorum. Ut nihil aliud dicam, Excell. et Magn., D.V. hoc in genere artis eruditæ et sapienter, facile colligent, quam necessaria sit hæc deliberatio; et quanto beneficio amplissimum Regnum Poloniæ sibi obstringent, cum ejusdem modi virosæ pesti, quâ violentissimè divexatur solerti suo in genio, remedium præsens investigaverint, inventumque literis mandarint. Multi variarum medicinarum primi auctores in perpetuitatis laude vivum hujus medicinæ ab Excell. et Magn. D.V. inventæ gloriæ, vestra propria erit, vos illustrabit, et cum omni consequentis posteritatis ætate florescat. Exspecto humanissimum responsum; sed si minus, quâm par est, neque verbis, quibus opus fuit, morbi vim expressi, peto ignoscant Excell. et Magn. D.V. homini alio artis in genere versanti. Adumbratis quædam hæc morbi est, interiora illino, acri ingenii sui acie, Excell. et Magn. D.V. dispiciant et contemplentur. Bene valere Excell. et Magnif. D.V. opto. Zamosci., die ultimâ mensis Octobris, Anno MDXCIX."

Here the reader finds a "complete and unabridged" copy of the earliest attempt at an *authoritative* "official" description of the distinctive features of this truly "distressfull" disease

—or condition, rather. And I would call his further attention to the fact that it is specially interesting at this present date in the history of a peculiarly ill-starred community, inasmuch as it really represents the united voice of the very small educated minority of a nation crying out in its dire distress, to the leaders of the recognised contemporary focus of medical light and leading, for the relief which could not be obtained at home. The genesis and diction of the above document constitute demonstrative evidence of the recognised existence at that date of a dignified cosmopolitan fraternity, composed of the elect, and duly learned as well as skilful, leaders of the science and practice of the art of healing; the single non-theological calling that shared with the sacred functions of the Church (which freely bestowed thereon its reflected dignity) the inspiring honour of having been practised by Christ himself during the whole period of His Divine mission. The loathsome horror of the existence, and widely-spread distribution, of the hirsute condition which came to be known as the “*Plica Polonica*” is superlatively emphasised by the fact that it was absolutely preventable—and by the very simplest of prophylactic methods. Thus it is that the too evident ignorance of its real nature testifies so convincingly to the gross neglect and physical degradation of the vast body of peasant serfs of the vast territory dominated by the most exclusive aristocracy of Europe. Its endemicity had, all too evidently, been a long established fact in that broad region of the world’s greatest plain. But I can find no evidence of its having obtained a definite footing within the precincts of “Holy Russia.”

That this loathsome condition was not exclusively characteristic of Polish nationality is shown by the following extract from Sckenkius (written some few decades before the issue of the pathetic appeal above-quoted):

“*Horridum quoddam, impexum, adeoque intricatum capitis et barba capillitum, apud nostros haud infrequens, cæterum veteribus cujuscunque ætatis Medicis incognitum observare licet, affecti prælongas capillorum tricas et cincinnos mirificè intricatos, digitæ saepè crassitie, ex reliquo capitis et barbæ capillitio, ad humeros, pectus, et aliquando ad umbilicū usque demissos propendere videas, aspectu plane horriblico, et Gorgoneum caput præferente. Quos illi magnâ religione prorsus incultos, nec ferro præscindere, nec pectine explicare sustinent. Persuasi omnino, gravissima capitum*

morborum fomenta, velut apoplexiæ, paralyseos, maniæ, et cum primis cephalalgiæ pertinacis, consimiliumque materiam iisdemque alendis absumi. Quæ sine superstitione, sine multâ hominum observatione ducti, quidvis potius quam eorundem culturam aut præsectionem, velut prorsus infestam et lethalem admittunt; factisque de experimento et historiâ periculis, sententiam suam mordicus tuentur. Qui ex his elegantiores haberi volunt, tricas hujusmodi, capitis quidem intra pileum, barbæ verò subtus pectorale convolutos prius recondunt, ne conspiciantur. Alii verò etiam inter congressus publicos, nec si celare velint, possunt, nec si possunt, velint. Adeo et gestantium et conscientium animis indubitate fide insedit, ut citra opprobrium aut vituperium, velut rem maximè ad vitam substinentiam necessariam conspiciebant sinant. Sed enim quosdam per universam vitæ suæ cursum eo modo aliuisse adnotatum est; sperantes sese à difficillimis impenderibusque sibi vindicari posse. Sunt qui ad eosdem subnatos, nunquam, ubi inviolatos custodivissent, recidivam se passos fuisse constanter affirment. Vulgus etiam, si in tales incidere contingat, statim de occulto aut latente atque difficili aliquando capitis malo eosdem suspectos habet. Quâ in re nunc superstitionem experientiam, an verò experientia superstitionem convincat, adjudicium meum nunc non revoco. Ego certè, ut nihil dissimilem, ut in vulgi sententiam prodendo; ita seminarium hujus modi morborum, non tam inde argui, quam ali, atque ne invadant hoc modo præveniri posse, de pilorum generationis caassis, eventibus, et curationibus, recepta Medicorum sententia, doceri posse, accedente, quæ ex vulgo constat, et quasi per manus tradita est, attestatione, sentio, Europæis aliis influisse hoc capillarum vitium nondum compare; nec plerisque Germaniæ partibus Brissais, Alsatis, Belgis, non nullisque Rheni tractibus quasi endemum, ut popello nostro notum est satis. Cives hic ipsi novimus supra triginta, quorum aliqui vel hodie quoque supersunt hoc capillitio insignes. Vulgus, Marenflecht, Marenwurkung, und Schrolius Zopff, quasi dicas contorsiones pilorum, vel Incuborum tricas, seu cincinnos vocat, quod putet Incubos et Faunos noctu easdem sugendo tractare. Alii Marenlock, hoc est, scrofarum tricas nominant, quod his similes à scrofarum collo enatas et propendentes aliquando observent.”

The reader may here be appropriately reminded of the fact that, not only the gentle performances of the British

Queen Mab, but the malignant operations of *Incubi*, *Fauni*, *Wehrwolves*, and vampires were established tenets of popular belief—especially in Central Europe.

One of the startling surprises of my own student days was afforded by the exhibition by one of our lecturers to his class, at the School of Surgery of the Royal College of Surgeons in Ireland, of the splendid specimen of Plica contained in the pathological section of the Museum of that institution. (At first sight I had made a snap-shot diagnosis of a *ling* of unusual surface dimensions—and I think, even now, that I can well afford to claim that the mistake was a very pardonable one, at a distance of fifteen or twenty yards!). We were then told that report represented the condition as peculiar to the Polish races from which it derived the name by which it was recognised; that it was believed to be a special—and incurable—pathological condition of the hirsute appendages of the scalp; that the hairs so affected grew to a monstrous size, and were of thickness so abnormal that they contained blood vessels of their own, and actually bled when cut, so that the attempt at complete abscission involved danger so great as to be absolutely prohibitive. The presence of enormous numbers of pediculi was also recognised—even those were overgrown and otherwise peculiar. Those constructed “facts” would seem to have been confirmed, towards the advent of evolution, by the data of the following extract from “the immortal scientist,” Charles Darwin :—

“ Mr. A. Murray has carefully examined the pediculi collected in different countries from the different races of men, and he finds that they differ, not only in colour, but in the structure of their claws and limbs. In every case in which many specimens were obtained the differences were constant. The surgeon of a whaling ship in the Pacific assured me that when the pediculi with which some Sandwich Islanders on board swarmed, strayed on to the bodies of the English sailors, they died in the course of three or four days. These pediculi were darker coloured, and appeared different from those proper to the natives of Chiloe, in South America, of which he gave me specimens. These, again, appeared larger and much softer than European lice. Mr. Murray procured four kinds from Africa, namely, from the negroes of the Eastern and Western Coasts, from the Hottentots and Kaffirs; two kinds from the natives of Australia;

two from North and two from South America. In these latter cases, it may be presumed that the pediculi came from natives inhabiting different districts. With insects, slightly structural differences, if constant, are generally esteemed of specific value; and the fact of the races of man being infested by parasites, which appear to be specifically distinct, might fairly be urged as an argument that the races themselves ought to be classed as distinct species."

The fact that the then almost awe-inspiring authority of the author of the *Voyage of the Beagle* was thus made utilisable in favour of the convincing significance of the evidence drawn from the racial peculiarities of the varieties of pediculi, in the geographical classification of races (or (*species*) forcibly impressed the somewhat ardent imagination of at least one inquirer into the mysteries of the "Origin of [Human] Species." The predatory methods and irritating powers and properties of the mediæval Polish parasite might, for aught we knew, have been far more effective than were those of the corresponding pests of our own insular regions. But no definite information on this head seemed to be available; even the self-sacrificing enthusiasm of Swammerdam did not seem to have thrown any special light on that aspect of the subject. Still, the notoriously primitive hygiene and sanitation of the Irish hovel of those days of high-handed landlordism—or, to speak more correctly, *Agent-ism*—in the epoch which preceded the "land war," furnished data which made me, from the very first, to suspect the true nature of the *Plica Polonica*. And I confess having felt considerable self-satisfaction on meeting some years afterwards with a copy of the *Mémoire sur la Plique polonaise*, published in 1817 by Chevalier J. R. C. de Kerckhove, one of the members of the medical staff who accompanied Napoleon's Grand Armée in the ill-starred Russian campaign—of which he gives one of the most vivid medical presentations, in which he mentions that:

"Le Duché de Varsovie est . . . mal cultivé et ne produisant presque rien que du mauvais seigle et des sapis. Les villages . . . que de misérables cabanes . . . Les villes . . . bâties en bois et irrégulièrement, et au surplus très sales. Les maisons fourmillent d'insectes. Dans les campagnes on voit la malpropreté la plus dégoûtante, les hommes pêle-mêle avec les animaux, qui sont chétifs et hideux. La malpropreté est la cause principale de la Plique Polonaise sur laquelle on a débité tant d'erreurs et d'absurdités."

I have no hesitation in suggesting that the lucid word-painting here presented goes further towards furnishing the key to the mystery of Poland's historic misery than a whole library of the histories, and pamphlets, and printed jeremiads, and platform speeches on that well-worn subject with which Europe had been so persistently flooded. No land-owner cared for the unfortunate Polish serf: the shifting of the centre of gravity of government might make his condition and outlook somewhat better—not possibly worse. The “partitions” only affected the powers and privileges of the aristocracy—so relatively few—and especially of the female members, who, as in other specially dowered and exclusive societies, made their influence felt everywhere. Such was the dismal reality of Polish life, and such the gruesome social and hygienic mystery of the genesis of the tell-tale *Plica Polonica*! It suited the dominant aristocracy that serfdom should believe that the matted and twisted hair of its squalid children, felted by the glutinous discharge with which the surface was continuously moistened, should be attributed to supernatural disapproval or malevolence. Such belief meant a continuous drag on self-respect, and “some” obstruction to revolutionary organisation!

The idea that lice fulfilled a highly specialised and very useful function in the removal of peccant humours from the human economy would appear to have been deeply rooted in the minds of the uneducated classes of probably all European countries—and survived, very vigorously, in the West of Ireland in my boyish days. Indeed, the peasantry of the remote districts still seem to think it injudicious to remove all pediculi from the “scabby” heads of delicate children; and this fact need cause no surprise when we learn the confident statement of opinion made by a distinguished French dermatologist of the last century to the effect that: “Enfin faut-il le dire, un préjugé issu des vieilles théories humorales et toujours très-tenace dans le peuple veut qu'on respecte la phthiriase comme une sorte de sauvegarde pour celui qui en est atteint. C'est, dans certains milieux, un axiome de médecine que la présence de poux, tout au moins sur la tête, est un signe de santé, que les parasites ne sont là que pour sucer le mauvais sang et qu'il faut bien se garder de les détruire. Les médecins doivent savoir que, de nos jours encore, des mères sèment la vermine sur la tête de leurs enfants dans le but de les préserver ou de les guérir d'une maladie.” Such clinical notions would now require a therapeutic advocate of peculiar moral fortitude!

Still we should never feel too far self-satisfied in our modernistic notions of ætiology and prophylaxis. The old-time notions of the salutary influence of derivatives and counter-irritants had assuredly more than a grain of truth at their basis, and the illiterate native wit of the Emerald Isle is not the only person who frequently facilitates the genesis of a bright idea by scratching (or more æsthetically massaging) his head.

A pruriginous eruption necessarily develops on the skin of the body of every individual who has been subjected for some time to the free attacks of pediculi. When the number of parasites is sufficiently great, the irritation—and consequent congestion—become pretty uniformly distributed. The continued scratching unavoidably causes definite solutions in the continuity of the cuticular integument, and the consequent oozing from the capillary plexuses of the rete Malpighii facilitates the nutriment of the uninvited “alien guests.” And in addition to this general feature of the generalised parasitic plague, we find that where a predisposition to the development of some other cutaneous disease had already existed, it is almost sure to manifest itself under the new conditions which result from the verminous invasion. Having regard to the generalised determination of blood towards the skin, there is no difficulty in accounting for the pathological mechanism. Thus the latent tendency to the outbreak of long dormant syphilitic eruptions on the skin has not infrequently been aroused to active pathological development by long continued pedicular irritation. Clinical record goes to show that eczema is the cutaneous disease which is most likely to be called into evidence by this abnormal form of stimulation. And its development will, very obviously, repay the energies of the parasites at a high rate of compound interest; for a patch of eczematous skin, with its continuous plasmatic oozing, surely affords the most favourable soil for their nourishment and progressive “culture.”

It is on the skins of persons who are naturally predisposed—usually by an apparent hereditary influence—to the development of chronic cutaneous affections, and, accordingly, to a chronically congested (and often oozing) integument, that pediculi must inevitably find the most congenial soil. There still exists a popular notion—of very venerable antiquity, indeed—which testifies to the greater frequency of pedicular invasion of fair and delicate skins; of the young individuals whose nasal rheum inclines to flow in abnormally copious

quantity on the slightest provocation. On such integuments the invading parasites unquestionably tend in some instances to multiply with a rapidity which is perfectly startling, and which would even appear to have given plausible countenance to the popular belief that in some such cases the lice had originally owed their existence to "spontaneous generation." Indeed, a very pronounced case of this type was reported in the last generation by no less "practical" an observer than the late Mr. Bryant of Guy's Hospital. It occurred in the person of a governess who was admitted into that hospital for treatment. She was about thirty years of age, and we are told that the whole cutaneous surface was literally "covered with lice." The irritation, and consequent scratching had, of course, necessarily led to the genesis of correspondingly diffuse excoriations, with serous oozing and formation of crusts. When this patient was admitted to hospital, she was immediately immersed in a warm bath. All visible insects and nits were removed with the most scrupulous care; and, when the skin was wiped dry, she was placed in a clean bed. Yet the skin was again covered with lice after an interval of two hours—and all the available remedies which were, in turn—and in combination, most carefully and repeatedly, employed for their extermination proved wholly ineffectual. Thus it would appear that some of the venerable "yarns" which had been rather liberally spun around the nuclear cocoon of pedicular tradition need not after all be rejected, after the usual methods of the scientific modernist, as mere "old wives' tales," or as the fungous excrescences of creative "superstition." The powers of riotously rapid reproduction possessed by the average *pediculus vestimenti* have been scientifically established for all time by the self-immolating experiment of Swammerdam's stocking, and the undeniable revelations thereby afforded—the details of which I will spare the reader on the present occasion.

Throughout the whole of the long-drawn-out period which preceded the relatively recent dawn of modern science and modern thought, the theory of *spontaneous generation* would appear to have been universally accepted. Accordingly, it was always brought to the front for the purpose of explaining the unexpected advent of excessively large numbers of living parasites. Even in the past generation, this theory did not fail to find very able and enthusiastic defenders in the

persons of the eminent French dermatologists, Cazenave and Devergie. And I will here embrace the opportunity of interjecting a statement of the opinion that the rank scientific heresy of our time, which is now always so scoffingly alluded to by the scientifically orthodox as the defunct one of "spontaneous generation," is more than likely to receive in the near future a new lease of argumentative activity from the coming generation of naturalistic philomaths—according to the familiar rule of undulatory movement in the "advancement of learning." Charlton Bastian has just left us, and no more logical intellect than that of the brilliant octogenarian enthusiast has been found to adorn the long roll of eminent physicians and naturalists who gave Great Britain the inspiring leadership in this department of inquiry and invention during the second half of the nineteenth century. And although it has been stated, and very generally believed, on *second-hand* authority and information, that in his controversy on the subject with the doughty champion of Darwinism and Agnosticism, Thomas Henry Huxley, the latter not merely knocked out his antagonist, but threw him over the ropes, the skilled logical expert will be able to see that the effective thrusts of the latter were really due to the well-known platform efficacy of the *argumentum ad hominem*.

The semi-superstition which appears to have always prevailed regarding the relationship between *pediculus* and *homo sapiens* would seem to be responsible for the genesis of the ethical crux which was so frequently discussed by the casuists of the Middle Ages: "Why we love not our lice as well as our children?" Also for the inspiration of the remark made (in another of his works) by the illustrious author of the *Religio Medici*, that Satan—then so actively represented at the Court of the Egyptian Pharaoh, after displaying a very creditable degree of skill in the reproduction of the other miracles of Moses, "was wholly confounded in the conversion of lice."

The accidental disinterment of this quotation recalls to my memory a personal recollection of a quarter of a century or so ago, when I happened to point out the record of that curious exception to the prowess of the thaumaturgists of the Court of Pharaoh to a very enthusiastic Egyptologist—who was also a whole-hearted despiser of the "chosen race," past and present. He pulled me up rather sharply when I asked whether he thought that the failure of achievement contained a concealed allegory. "You forget," he promptly interjected, "that the hygiene and sanitation of the priestly

aristocracy at least, of the Egypt of that day were probably the most perfect that the world has ever seen; while the Jews were the dirtiest of all Eastern tribes! The Egyptians would surely draw the line at the lice.' I made no comment, as I knew that my interlocutor was immeasurably my superior then in his mastery of Egyptological details.

And this consideration also suggests another illuminating side-light on the genesis and significance of the endemic *Plica Polonica*—in a region of the world which was destined to prove the most comprehensive land of refuge for the scattered tribes of the *Diaspora*. I have already referred to the fact that the Polish aristocracy of the palmy days of Poland's pride and prosperity was the most exclusive of any country. The intervening gulf between noble and serf was wholly unbridgeable. The latter tilled the soil to which he was attached, and handed half (no doubt, often more) of the produce to his lord. Personal contact was unthinkable, and personal intercourse of any kind was limited to the physically unavoidable. The width of the yawning gulf of social cleavage left ample room for the penetration of the inundating Hebrew hordes, who not merely found ample elbow-room for settlement in all the towns and villages, but the most suitable opportunities for the exercise of their unique (inherited, acquired, and continuously trained) capabilities as commercial agents, factors, purveyors, and middlemen, in every department of business whatever. Needless to say, their settlement in that curiously governed "republican" kingdom, had a progressively ruinous effect on the status and sanitation of the ill-starred Polish serf; who was stript of his annual landed produce by post-dated bonds, and pressed—almost literally—more and more deeply with each passing year into the mire and marsh of his native soil. The endemic prevalence of the *Plica* is surely the most unquestionable evidence of the fact. And it was along the same bordering gulf of social and political demarcation that the Powers of the Triple Partition found their circumferential zone of "easy transmission"—to borrow a Newtonian phrase of peculiarly appropriate applicability. The criminal negligence of the ruling powers was utterly antagonistic to Christian thought for the woes of the poor Polish child, whose eczematous oozing scalp promoted the rapid growth of hair and vermin—of which the serfdom among which it flourished had no more intelligent knowledge than had their own cattle, of their respective epidemic of endemic disorders.

The ways of Providence are surely mysterious, and the ways of politicians are surely dark—and often even vain—as recent events have taught the most confiding and the most sceptical; but bad government—with its accessories of bad food, bad air, and bad general hygienic conditions—will always be found, on the coming of harvest, to provide their own proportionate crop of evil results: both for the misruled community and its wickedly mischievous guides. And those of my readers who have personally visited the Royal Schloss in the majestically placed Kremlin of the flowery days of the Jagellon dynasty, and the jewelled sarcophagi that enclose the earthly remains of the kings and archbishops which are deposited in the rock-hewn receptacles beneath the adjacent Royal Cathedral, must surely have given a more than passing sigh to the memory of the glory that was Cracow, and the persistent presence of the misery that was Poland.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

“ Soloid ” Naso-Pharyngeal (Eucaïne) Compound.

MESSRS. BURROUGHS, WELLCOME & Co., Snow Hill Buildings, London, E.C., have added to their list a new product called “ Soloid ” Naso-Pharyngeal (Eucaïne) Compound. The formula is :—

R. Sodii Chloridi,	gr. 7	(0.454 gm.)
Boracis,	gr. 2½	(0.162 gm.)
Acidi Borici,	gr. ¾	(0.049 g.m.)
Sodii Benzoatis,	gr. ½	(0.032 gm.)
Menthol,	gr. 1/50	(0.0013 gm.)
Thymol,	gr. 1/100	(0.00065 gm.)
Eucaïnæ Hydrochloridi,	gr. 1/6	(0.011 gm.)
Ol. Gaultheriæ,	min. 1/20	(0.003 c.c.)

This “ soloid ” differs from the well known “ Soloid ” Naso-Pharyngeal Compound only in including Eucaïne Hydrochloride in place of a corresponding equivalent of the cocaïne salt. “ Soloid ” Naso-Pharyngeal (Eucaïne) Compound, powdered and dissolved in one to three ounces of water, is excellent as a gargle or spray in irritable conditions of the nose and throat. A solution of two in ten ounces of water has been used with success as a lotion in conjunctivitis. The soloid is issued in bottles of 25 and 100.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, December 2, 1916.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended Saturday, December 2, 1916, in the Dublin Registration Area and the eighteen principal provincial Urban Districts of Ireland, was 16.7 per 1,000 of the aggregate population, which for the purposes of these returns is estimated at 1,122,268. The deaths from all causes registered in the week ended Saturday, December 2, and during the period of four weeks ended on that date, respectively, were equal to the following annual rates per 1,000 of the population :—Nineteen Town Districts, 16.7 and 16.9 ; Dublin Registration Area, 17.7 and 19.2 ; Dublin City, 18.7 and 20.7 ; Belfast, 16.8 and 15.3 ; Cork, 23.8 and 19.9 ; Londonderry, 11.7 and 13.7 ; Limerick, 17.6 and 15.9 ; and Waterford, 13.3 and 17.6.

The deaths from certain epidemic diseases—namely, enteric fever, typhus, small-pox, measles, scarlet fever, whooping-cough, diphtheria, dysentery, and diarrhoeal diseases—registered in the 19 town districts during the week ended Saturday, December 2, were equal to an annual rate of 0.9 per 1,000. Among the 126 deaths from all causes in Belfast were 1 from measles, 1 from whooping-cough, 1 from diphtheria, 2 from diarrhoeal diseases, and 1 from acute anterior poliomyelitis. Among 9 deaths recorded in Londonderry were 1 from enteric fever and 1 (of a child under 2 years) from diarrhoea and enteritis.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock and Kingstown. The population of the Area is 397,000.

In the Dublin Registration Area the births registered during the week ended December 2 amounted to 206—118 boys and 88 girls, and the deaths to 148—71 males and 77 females.

DEATHS.

The deaths registered, omitting the deaths (numbering 13)

of persons admitted into public institutions from localities outside the Area, represent an annual rate of mortality of 17.7 per 1,000 of the population. During the forty-eight weeks ended with Saturday, December 2, the death-rate averaged 19.7, and was 1.5 below the mean rate for the corresponding portions of the 10 years 1906-1915. The rate for all deaths registered during the forty-eight weeks was 21.3, and in the corresponding period of the preceding 10 years it had been 22.5.

The 135 deaths appertaining to the Area included 2 from enteric fever, 1 from measles, 1 from influenza, and 5 from diarrhoeal diseases. In the 3 preceding weeks deaths from enteric fever had numbered 0, 1, and 0; and deaths from diarrhoeal diseases 6, 3, and 5 respectively. There had been no deaths from measles during the 3 preceding weeks.

Tuberculosis caused 18 deaths, as against 15, 23, and 16, respectively, in the three weeks preceding. Of the 18 deaths ascribed to tuberculosis, 12 were referred to pulmonary tuberculosis, 2 to tubercular meningitis, 2 to abdominal tuberculosis, 2 to other forms of tuberculosis.

Seven deaths were caused by cancer, 10 by pneumonia (4 by broncho-pneumonia, 1 from lobar pneumonia, and 5 by pneumonia, type not distinguished), 11 by organic diseases of the heart, and 21 by bronchitis.

Among deaths of infants under one year old, 4 were ascribed to convulsions, 6 to congenital debility, and 4 to prematurity.

Thirty-eight of the deaths registered during the week appertaining to the Area were of children under 5 years of age, 30 being infants under one year, of whom 9 were under one month old.

Of the 135 deaths recorded, 45 occurred in hospitals and other public institutions.

STATE OF INFECTIOUS DISEASES.

The following returns of the number of cases of Infectious Diseases notified under the "Infectious Disease Notification Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," have been furnished by the respective sanitary authorities :—

TABLE I.—SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area—(viz., the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock and Kingstown), and in the Cities of Belfast, Cork, Londonderry, Limerick, and Waterford, during the week ended December 2, 1916, and each of the preceding three weeks.

A dash (—) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending																	
		Measles		Scarlet Fever		Typhus		Relapsing Fever		Diphtheria		Membranous Group						
City of Dublin	Nov. 11	-	7	4	.	.	.	1	3	.	.	4	1	.	.	.	9	26
	Nov. 18	-	8	1	.	.	.	1	1	.	.	8	1	.	.	2	25	
	Nov. 25	-	5	1	1	.	.	6	3	.	.	9	24	
	Dec. 2	-	7	2	2	8	20	
Rathmines and Rathgar Urban District	Nov. 11	-	1	1	1	1	
	Nov. 18	-	1	1	b	2	
	Nov. 25	-	5	1	.	.	.	6	6	
	Dec. 2	-	1	1	1	
Pembroke Urban District	Nov. 11	.	1	1	.	.	.	2	2	
	Nov. 18	.	1	2	.	.	3	3	
	Nov. 25	.	2	1	.	.	.	3	3	
	Dec. 2	.	2	2	2	
Blackrock Urban District	Nov. 11	
	Nov. 18	
	Nov. 25	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Dec. 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Kingstown Urban District	Nov. 11	-	-	.	.	.	.	.	.	.	.	.	.	.	.	.
	Nov. 18	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Nov. 25	-	2	.	.	.	.	.	.	.	.	1	.	.	.	3
	Dec. 2	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
City of Belfast	Nov. 11	-	16	3	.	.	4	4	.	.	.	1	27	
	Nov. 18	-	22	4	.	.	9	7	.	.	.	1	43	
	Nov. 25	-	10	5	.	.	6	4	25	
	Dec. 2	-	15	4	.	.	4	3	26	
City of Cork	Nov. 11	1	3	2	1	.	.	.	7	
	Nov. 18	.	.	.	.	.	.	.	.	2	2	1	.	.	.	4c
	Nov. 25	1	2	.	.	.	.	2	.	.	5	1	.	.	.	9c
	Dec. 2	.	4	.	.	.	.	.	.	1	.	.	.	.	.	7
City of Londonderry	Nov. 11	-	5	.	.	.	.	.	.	2	.	.	.	.	.	7
	Nov. 18	-	3	.	.	.	.	.	.	2	.	.	.	.	.	5
	Nov. 25	-	10	.	.	.	.	.	.	.	.	.	.	.	.	10
	Dec. 2	-	4	.	.	.	.	.	.	.	.	.	.	.	.	4
City of Limerick	Nov. 11	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Nov. 18	-	1	.	.	.	.	.	.	.	.	.	.	.	.	2
	Nov. 25	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Dec. 2	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
City of Waterford	Nov. 11	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Nov. 18	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Nov. 25	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	Dec. 2	-	.	.	.	.	.	.	.	.	.	.	.	.	.	.

a Continued fever.

b Notifiable as from 20th November.

c Not including one case of varicella.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Table II. exhibits the number of cases of certain infectious diseases treated in the Dublin Hospitals during the week ended December 2, 1916, and the number under treatment at the close of each of the three preceding weeks.

From this Table it appears that the cases admitted to

TABLE II.

Diseases	No. of Cases in Hospital at close of week ended			Week ended December 2.				No. under treat- ment at close of week
	Nov. 11	Nov. 18	Nov. 25	No. admitted	Dis- charged	Died		
Enteric Fever	88	81	74	4	18	—	—	60
Typhus —	6	4	4	—	—	—	—	4
Small-pox —	—	—	—	—	—	—	—	—
Measles —	4	2	2	2	—	—	—	4
Scarlet Fever	62	60	55	12	8	—	—	59 ^a
Diphtheria —	11	12	14	1	2	—	—	13
Pneumonia —	17	17	21	9	2	1	—	27

^a Exclusive of 17 patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

hospital during the week ended December 2, and the cases under treatment at its close, respectively, were as follow :— Enteric fever 4 and 60 ; typhus 0 and 4 ; measles 2 and 4 ; scarlet fever 12 and 59 ; and diphtheria 1 and 13. Nine cases of pneumonia were admitted during the week, and 27 remained under treatment at its close. Of the deaths in hospitals during the week 1 was from pneumonia.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, December 2, in 96 large English towns (including London, in which the rate was 16.7), was equal to an average annual death-rate of 15.7 per 1,000 persons living. The average rate for 16 principal

towns of Scotland was 13.8 per 1,000, the rate for Glasgow being 14.3, and that for Edinburgh 11.1.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell-Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended December 2. From this report it appears that of 74 cases notified, 20 were of scarlet fever, 19 of diphtheria, 19 of pulmonary tuberculosis, 10 of other forms of tuberculosis, 4 of erysipelas, and 2 of cerebro-spinal fever. Among the 467 cases of infectious diseases in hospital at the close of the week were 147 of pulmonary tuberculosis, 137 of scarlet fever, 115 of diphtheria, 22 of measles, 6 of erysipelas, 5 of enteric fever, 2 of cerebro-spinal fever, and 1 of whooping-cough.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of November, 1916.

Mean Height of Barometer,	- - -	29.631 inches.
Maximal Height of Barometer (13th, at 9 p.m.),	-	30.342 ,,
Minimal Height of Barometer (5th, at 9 a.m.),	-	28.502 ,,
Mean Dry-bulb Temperature,	- - -	45.6°.
Mean Wet-bulb Temperature,	- - -	43.8°.
Mean Dew-point Temperature,	- - -	41.7°.
Mean Elastic Force (Tension) of Aqueous vapour	-	.265 inch.
Mean Humidity,	- - -	86.8 per cent.
Highest Temperature in Shade (on 10th),	-	60.0°.
Lowest Temperature in Shade (on 27th),	-	33.1°.
Lowest Temperature on Grass (Radiation) (27th)	-	29.0°.
Mean Amount of Cloud,	- - -	65.3 per cent.
Rainfall (on 19 days), -	- - -	5.771 inches.
Greatest Daily Rainfall (on 17th),	- - -	1.564 ,,
General Directions of Wind,	- - -	W., S.W., S.

Remarks.

A month of very heavy rainfall, marking a record for November. Strong winds were prevalent from points between S.E. and W. through S. and S.W. A cyclonic system of great depth and intensity, centred over Kerry on the morning of the 17th and over Brittany next morning, caused violent easterly gales and heavy downpours of rain and sleet, or snowstorms, in many parts of the British Isles. The Dublin and Wicklow Mountains were, as a result, deeply covered with snow from the 17th to the 21st inclusive.

Opening with a brief spell of fair weather, the month soon showed its stormy character in a gale and heavy rainfall on the 3rd.

The first complete week of the month opened with a depression of unusual depth (28.28 inches) lying off the Bristol Channel; it closed with an anticyclone central over France and the mouth of the English Channel, in which districts the barometer stood above 30.40 inches. Along the north-western edge of this high pressure system a very warm S.W. wind swept across Ireland and Scotland, raising the air-temperature to 10° or even 15° above the average.

The week ended Saturday, the 18th, was at first fine and mild, but became afterwards stormy, wet and cold—Friday, the 17th, being especially inclement as already noted above.

The third week began with two very wet, cold days. Then came a brief spell of fine mild weather, to be in turn followed by a barometric depression and a gale of wind from S.W.

The last few days were changeable—at first cold and dry, with hoar frost at night, but later mild and dull with moderate rainfalls.

In Dublin the mean maximal temperature was 50.4° , compared with the average (49.9°); and the mean minimal temperature was 42.6° , compared with the average, 40.8° . The arithmetical mean temperature (46.5°) was 1.2° above the average (45.3°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 45.6° . In the fifty years ending with 1915, November was coldest in 1878 (M. T. = 38.2°) and in 1915 (M. T. = 39.9°). It was warmest in 1899 (M. T. = 50.7°) and in 1881 (M. T. = 50.3°).

The mean height of the barometer was 29.631 inches, or 0.229 inch below the corrected average value for November—namely, 29.860 inches. The mercury rose to 30.342 inches at 9 p.m. of the 13th, and fell to 28.502 inches at 9 a.m. of the 5th. The observed range of atmospheric pressure was therefore, 1.840 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 45.6° , or 6.3° below the value for October, 1916. The arithmetical mean of the maximal and minimal readings was 46.5° , compared with a thirty-five years' (1871–1905) average of 45.3° . Using the formula, $\text{Mean Temp} = \text{Min.} + (\text{Max.} - \text{Min.}) \times .500$, the mean temperature was 46.5° or 1.2° above the average mean temperature for November, calculated in the same way, in thirty-five years, 1871–1905, inclusive (45.3°). On the 10th the thermometer in the screen rose to 60.0° —wind, W.S.W.; on the 27th the temperature fell to 33.1° —wind, W. The minimum on the grass was 29.0° , also on the 27th.

The rainfall was 5.771 inches, distributed over 19 days.

The rainfall was considerably, while the rain-days were less markedly, above the average. The average rainfall for November in the thirty-five years, 1871–1905, inclusive, was 2.720 inches, and the average number of rain-days was 17. In 1888 the rainfall in November was very large—6.459 inches on 26 days. On the other hand, in 1896 only 0.664 inch fell on 9 days. In November, 1915, the rainfall was 3.666 inches on 10 days.

High winds (force 4 to 7) were noted on 13 days, and attained the force of a gale (force 8) on 6 days—the 3rd, 4th, 16th, 17th, 18th, and 24th. The atmosphere was foggy in Dublin on the 13th. There were solar halos on the 4th and 21st, lunar halos on the 8th and 12th, and a lunar corona on the 6th. Hail, sleet, and snow fell on the 17th and 18th. A splendid double rainbow appeared at 4 15 p.m. of the 1st and there was a faint lunar rainbow at 8 15 p.m. of the 3rd.

The rainfall in Dublin during the eleven months ended November, 1916, amounted to 35.894 inches on 209 days, constituting a record rainfall for the period. In 1915 the rainfall up to November 30th, inclusive, was 28.645 inches on 175 days; in 1914, it was 20.330 inches on 175 days; in 1913, 26.979 inches on 178 days; in 1912, 25.761 inches on 185 days; in 1911, 19.404 inches on 163 days; in 1887 only 15.378 inches on 141 days. In the 35 years, 1871–1905, inclusive, the average rainfall in the eleven months of the year in Dublin was 25.750 inches on 181 days. For the year 1916, therefore, the measurement up to the end of November is nearly 40 per cent. over the average.

Mr. T. Mulock Bentley reports that at the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.655 inches, the range of atmospheric pressure being from 28.52 inches at 9 a.m. of the 5th to 30.35 inches at 9 p.m. of the 13th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 46.7°. The arithmetical mean of the daily maximal and minimal temperatures was 46.8°. The screened thermometers rose to 61° on the 10th, and fell to 33° on the 27th. On the 21st and 27th the grass minimum was 27°. Rain fell on 17 days to the amount of 5.62 inches, the greatest fall in 24 hours being 1.55 inches on the 17th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 52.2 hours, of which 6.0 hours occurred on the 6th. The mean daily sunshine was 1.7 hours. The mean temperature of the soil at 9 a.m. at a depth of one foot was 46.9°; at a depth of 4 feet it was 50.3°.

Captain Edward Taylor, D.L., returns the rainfall at Ardgillan, Balbriggan, Co. Dublin (height above sea level, 210 feet), as 5.04 inches on 18 days, the largest measurement in

one day being 1.42 inches on the 4th. The rainfall was 1.26 inches above the average and the rain-days were 2 above the average. From January 1 to November 30, the rainfall at Ardgillan has been 34.96 inches on 202 days, or 8.79 inches above the average, while the rain-days were 33 above the average. The highest shade temperature in November was 56.9° on the 10th, the lowest was 31.7° on the 27th. In November, 1901, the rainfall at Ardgillan was 5.05 inches; thus slightly exceeding the fall in 1916. In 1896 only 0.92 inches of rain fell in November.

At Stirling, Clonee, Co. Meath, Mr. J. Pilkington registered a rainfall of 6.43 inches on 18 days, the maximum in any one day being 1.52 inches on the 4th. On the 17th also there was the large measurement of 1.34 inches. From January 1 to November 30, 1916, rain fell on 213 days to the amount of 41.23 inches. This station stands 231 feet above sea-level.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 4.38 inches on 19 days, the greatest fall in 24 hours being 1.12 inches on the 3rd.

Miss Mary Love reports that at the Cheeverstown Convalescent Home for Little Children, Clondalkin, rain fell on 19 days to the amount of 6.37 inches, the greatest daily fall being 1.53 inches on the 17th.

At the Ordnance Survey Office, Phoenix Park, Dublin, the November rainfall was 6.27 inches on 19 days. The heaviest fall in 24 hours was 1.46 inches on the 17th. The total amount of bright sunshine was 64.5 hours, the longest duration on any one day being 7.8 hours on the 6th. The mean maximal temperature was 50.4° ; the mean minimum was 40.0° , and the mean temperature was 45.2° .

Mr. Harold Fayle supplies the following Weather Report for November, from Sandford Lodge, Ranelagh, Dublin:—

Mean corrected height of barometer	...	29.650 in.
Highest corrected reading, 13th, 9 p.m.	...	30.35 „
Lowest corrected reading, 7th, 9 a.m.	...	28.79 „
Mean dry bulb temperature	...	45.9°
Mean wet bulb temperature	...	44.3°
Mean maximal temperature	...	50.9°
Mean minimal temperature	...	41.8°
Arithmetical mean temperature	...	46.4°
Highest temperature in screen, 10th, 24th	...	60°
Lowest temperature in screen, 22nd	...	32°
Lowest temperature on grass, 22nd	...	21°
Rainfall, on 19 days	...	6.16 in.
Greatest daily rainfall, 17th	...	1.98 „
Mean amount of cloud	...	76 per cent.
Days of clear sky	...	2
Days of overcast sky	...	17
Nights of ground frost	...	7
General direction of wind	...	S.W.

Mr. F. Dudley Joynt registered 5.505 inches of rain on 21 days at 89 Anglesea Road, Donnybrook, Dublin, the largest measurement in 24 hours being 1.440 inches on the 17th. The eleven months' rainfall in 1916 at this station amounts to 33.675 on 196 days. The thermometer rose to 60° on the 10th, and fell to 32° on the 26th.

Dr. Arthur S. Goff reports that rain fell on 21 days at Belfort House, Dundrum, Co. Dublin, the amount being 7.64 inches, of which 2.01 inches were measured on the 17th. The temperature range was from 60° on the 10th to 33° on the 27th. The mean temperature in the shade was 46.6°.

Mr. W. J. McCabe returns a rainfall of 4.16 inches on 20 days at Marino, Killiney, Co. Dublin. The heaviest fall in 24 hours was 1.07 inches on the 4th. The average November rainfall at Cloneevin, Killiney, in the 24 years, 1885-1908, was 2.880 inches on 16 days.

At Coolagad, Greystones, Co. Wicklow, Dr. John H. M. Armstrong, M.B. measured 6.30 inches of rain on 20 days, the maximal falls in 24 hours being 1.37 inches on the 4th and 1.02 inches on the 17th. From January 1 to November 30, 1916, the rainfall at Coolagad amounted to 42.88 inches on 208 days.

Mrs. Sydney O'Sullivan and Master Basil Ross recorded 5.53 inches of rain on 17 days at Auburn, Greystones, Co. Wicklow, the greatest rainfall in 24 hours being 1.30 inches on the 4th.

Dr. F. O'B. Kennedy, Resident Medical Officer, reports that 6.39 inches of rain fell on 25 days at the Royal National Hospital for Consumption for Ireland, near Newcastle, Co. Wicklow. The maximum in 24 hours was 1.65 inches on the 4th. The mean temperature of the month at the Hospital was 45.5°, the extreme readings of the shade thermometer being—highest, 62° on the 12th and 13th; lowest, 31° on the 26th. The mean maximal temperature was 50.2°, the mean minimum was 40.8°.

The Rev. Canon Arthur Wilson recorded a rainfall of 12.60 inches on 29 days at the Rectory, Dunmanway, Co. Cork. The heaviest falls in 24 hours were 3.64 inches on the 16th, 1.13 inches on the 2nd, 1.10 inches on the 23rd, .92 inch on the 3rd, .82 inch on the 6th, .75 inch on the 4th. The rainfall on the 17th (3.64 inches) was the heaviest fall which has been recorded at the Rectory. The next heaviest was 2.52 inches on October 1st, 1916. Previous to that 2.04 inches on November 14th, 1911, held the record. The total measurement for October and November reaches 26.02 inches. Tradition says that the flood in the River Bandon on the morning of the 17th was the highest for 44 years. November was a mild month with many warm sunny days. Frosts occurred on the nights of the 18th, 19th, 20th, 21st and 26th. Thunder was heard on the afternoon of the 25th. There were frequent storms. The total rainfall for 11 months has been 62.07 inches, or 2.66 inches more than the average for a whole year.

THE "WELLCOME" PHOTOGRAPHIC EXPOSURE RECORD AND
DIARY, 1917.

A SHORT GUIDE TO PHOTOGRAPHIC PRACTICE is the title of the opening article in the new edition of this valuable annual. It might very well be the title of the whole compact publication, than which we know no other which gives so much real practical guidance in photography in so little space. It deals with every essential phase of photography, and from exposure to the final touches to the finished print it provides not merely the advice of experts, but it cloaks that advice in crisp, understandable English, free from confusing and distracting verbal embellishment, and makes it intensely practical by the provision of really useful tables and by that simplest of all exposure estimators—the "Wellcome" Photographic Exposure Calculator. Naturally the question of tank development receives full attention, and tables are given for timing development with all varieties of plates and at all possible temperatures. In this connection it is interesting to note the introduction of a British product, "Tabloid Tancol" Developer, prepared especially for use in tanks. Among the many tables, which contain a vast amount of information in the minimum of space, and represent the carefully tabulated result of much calculation and expert experience, we may mention:—Time-tables, for development at various temperatures and with different classes of plates; factors for factorial development; contact printing at different distances from the light; focussing by scale; correct temperature for various photographic operations; imperial and metric weights and measures; exposures for interiors; exposures in telephotography; exposures in copying, enlarging and reducing; exposures for moving objects; exposures for photography at night; exposures by artificial light; relative exposures required by different films, plates, bromide papers and lantern plates, &c., &c. With its diary, its memo. pages and spaces for recording notes on exposure, its pencil and wallet, this pocket-book provides a companion which no photographer should be without. The Northern Hemisphere and Tropical Edition is prepared specially for use in all countries in the Northern Hemisphere and Tropics, and is sold by dealers and booksellers in Great Britain at 1s., post free 1s. 1½d. Special editions for the Southern Hemisphere and the United States of America are also issued.

In Memoriam.

JAMES LITTLE,

M.D., EDIN. ET (*Honoris Causâ*) DUBL.;
F. AND EX-P.R.C.P.I., M.R.I.A., HON. PHYS. IN ORDINARY TO
H.M. THE KING IN IRELAND;
CROWN REPRESENTATIVE FOR IRELAND ON THE GENERAL
MEDICAL COUNCIL.

DEEPLY regretted and sincerely mourned by a vast number of friends both within and without the ranks of the Profession, this eminent physician passed away on the morning of Saturday, December 23, 1916, after an illness, or rather a gradual failure of health and strength, extending over a period of nearly six months. As a matter of fact, it was on Saturday, July 1, of the past year, that he first noticed symptoms of that ill-health which was to end a busy and a useful life.

Born in Newry on January 21, 1837, DR. JAMES LITTLE had entered on the twelfth month of his eightieth year when the last call came.

He was the son of Archibald Little by his wife Mary, daughter of Richard Coulter, of Carnmeen. He was educated, first at the Academy, Cookstown, Co. Tyrone, and afterwards at the Royal School, Armagh. On leaving school, young LITTLE chose Medicine as his profession, and in accordance with the custom of those far-off days, he became apprenticed to the late Dr. John Colvan, Physician to the Armagh Fever Hospital. He also had the advantage of being a pupil of the late Dr. Alexander Robinson, Surgeon to the Armagh County Infirmary. The preliminary clinical training thus placed within his reach proved of great value to him, as he often stated in after years.

In November, 1853, he entered the School of the Royal College of Surgeons in Ireland, attending the hospital practice of the City of Dublin Hospital, and also the cliniques at the Whitworth and Richmond Hospitals. As it was his intention to graduate in the University of

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Edinburgh, he took out two courses of lectures in the School of Physic of the University of Dublin as required of Dublin students by the regulations of the Edinburgh University. On June 29, 1856, LITTLE received the "Letters Testimonial" of the Royal College of Surgeons in Ireland. He then returned for six months to Armagh, where Dr. Robinson allowed him to take responsible charge of the County Infirmary, and where, through the kindness of Dr. James Cuming, for whom he ever cherished a warm regard, and of whose professional ability he had the highest opinion, he was also permitted to attend regularly the County Lunatic Asylum.

In the spring of 1857 DR. LITTLE was appointed Surgeon in the Peninsular and Oriental Steam Packet Company's service, and for three years he travelled to and from India, remaining on the Company's Calcutta Station until the summer of 1860. After his final home-ward voyage, he went to Edinburgh, and graduated as Doctor of Medicine in the University early in 1861. He carried off the prize in Psychological Medicine, at that time awarded by the Commissioners of Lunacy for Scotland.

After graduation, DR. LITTLE spent two years in private practice in Lurgan and subsequently proceeded to the Continent, where he devoted a year to post-graduate study.

He was now thoroughly equipped for his life-work, and on his return from the Continent he resolved to settle in Dublin. In this City he was fortunate enough to become closely associated with Dr. Alfred Hudson, formerly Physician to the Adelaide Hospital, but at that time Physician to the Meath Hospital and County Dublin Infirmary, and in the enjoyment of a large and lucrative practice.

LITTLE'S career was now assured. In 1865 he was elected one of the Physicians to the Adelaide Hospital, Dublin, and in 1868 he became Lecturer on Practice of Medicine in the Ledwich School of Medicine, Peter Street, Dublin. In the interval between these appointments, DR. LITTLE was admitted a Licentiate of the King and Queen's College of Physicians in Ireland (now

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the Royal College of Physicians of Ireland) on April 11, 1865, being elected a Fellow on St. Luke's Day, October 18th, 1867. Since the death of his friend and colleague, Dr. Lombe Atthill on September 14, 1910, Dr. LITTLE has been Senior Fellow or "Father" of the College. In it there was hardly a place of honour or of office that DR. LITTLE did not fill in succession. He served as Censor in the years 1868-69, 1871-73, and 1877-79. He was Registrar in the interval between his first two Censorships—namely, from St. Luke's Day, 1869, to St. Luke's Day, 1871. As Senior Censor he filled the office of Vice-President in his third Censorship, 1877 to 1879. On St. Luke's Day, 1886, he was unanimously elected President, the duties of which high office he discharged with consummate tact and boundless hospitality during the two following years. Two notable incidents rendered his Presidency historic—for the first time in its long history of more than two centuries a Viceroy of Ireland honoured the College by dining in Hall as guest of the President. The Viceroy in question was the Most Noble the Marquis of Londonderry. Again, in June, 1887, the President, accompanied by the then Registrar of the College, the writer of this Memoir, had the honour of presenting in person to Her Majesty Queen Victoria at Windsor Castle, the loyal Address of the President and Fellows of the College on the auspicious occasion of the Golden Jubilee of Her Majesty's reign.

To return to another aspect of DR. LITTLE's varied and most active life—on December 3, 1872, he was unanimously elected, in succession to the veteran Dr. Charles Benson, Professor of Practice of Medicine in the School of Surgery of the Royal College of Surgeons in Ireland. This appointment necessitated his resignation of the Lectureship on the Practice of Medicine in the Ledwich School—an appointment, which it may be stated *en parenthèse*, passed then into the capable hands of the late Dr. Arthur Wynne Foot, at the time Senior Physician to the Meath Hospital and County Dublin Infirmary.

DR. LITTLE's tenure of office of the College of Surgeons' Professorship was one long brilliant and triumphant success. Medical Students flocked to his

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lectures from other medical schools, so that the benches in the large Lecture Theatre of the College were crowded from top to bottom. During those halcyon days many a student was content voluntarily to duplicate his course of lectures on Practice of Medicine, attending on three days a week the lectures delivered in his own School, and on the alternate three days attending voluntarily DR. LITTLE's clear and simple, yet most practical, word-pictures of disease and its treatment.

In 1883, DR. LITTLE, overwhelmed with professional work, felt it to be his duty to resign his Professorship. The Council of the College recognised his great services to medical education and to their School in an Address expressive of thanks for those services and of regret at his resignation. How keenly DR. LITTLE felt the surrender of this side of his many activities may be gathered from the fact, afterwards communicated by him to the writer, that he went home from the Lecture Theatre after bidding his class farewell, shut himself into his study, and wept like a child. The vast demand upon his time by a large consulting practice in town and country was the determining factor in leading to a severance of his connection with the Professorship. That splendid practice became his lot before he had long settled in Dublin, and no one deserved it more. Visitors to his consulting room had tangible proof of the thoroughness with which DR. LITTLE examined his patients and noted his cases. He spared no pains or time in mastering every detail, and his treatment was the result of a pains-taking personal investigation of signs and symptoms and a ripe and recorded experience extended over many years. In an interesting biography in the second edition (1916) of a "History of the Royal College of Surgeons in Ireland," Sir Charles A. Cameron writes:—"Of his kindness and skill the author of this History and members of his family have grateful remembrances." Such tributes, all unwritten, might be counted by hundreds and thousands.

Turning to the literary side of DR. LITTLE's activities, we find that on completion of the forty-sixth volume (August-November, 1868) of the New Series of the DUBLIN QUARTERLY JOURNAL OF MEDICAL SCIENCE, he succeeded

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Dr. George Hugh Kidd as Editor. In an editorial notice prefixed to the number for February, 1869 (Vol. XLVII., No. 93, N.S.), DR. LITTLE expressed the hope that the Journal would continue "to be recognised as repository of the results of original inquiry in this country." To our pages he himself contributed many articles of sterling merit through a long series of years.

Towards the close of 1871, DR. LITTLE took an important editorial step. In the number for November of that year (Vol. LI., No. 104, N.S.), he announced that for the future the Journal would appear monthly instead of quarterly, and that the new (third) series would begin on January 1, 1872. In an editorial notice issued in the first number of the third series under the revived original title of THE DUBLIN JOURNAL OF MEDICAL SCIENCE, DR. LITTLE informed the readers that "The Proprietors had determined on making the change this year, being convinced that it will be for the convenience of their subscribers," and that "the Journal will preserve the character it has maintained since its commencement in 1832." In 1873 DR. LITTLE handed over the editorial management to the present Editor, but to the end of his long and eventful life he continued to take a keen and active interest in its welfare.

In the course of his fine career honours were showered upon the subject of this Memoir. He was an Honorary Physician-in-Ordinary in Ireland to three successive Sovereigns—Queen Victoria, King Edward VII, and King George V. He was Crown Nominee for Ireland on the General Medical Council, his first appointment bearing date November 26, 1897. In 1893 the University of Dublin conferred on him the degree of Doctor of Medicine (*honoris causâ*), and in 1898 he was elected Regius Professor of Physic in the University of Dublin, in succession to Sir John Banks, K.C.B., resigned. In 1901, his own Alma Mater, the University of Edinburgh, conferred on him the honorary degree of LL.D. He was chosen Consulting Physician to the Adelaide Hospital on his resignation as Visiting Physician in 1912, after forty-six years' service as clinical teacher. He was also Consulting Physician to the Rotunda Hospital, Steevens'

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Hospital, the Royal Victoria Eye and Ear Hospital, and the Rest for the Dying, Camden Row, Dublin. He passed through the Presidential Chair of the Association of Physicians of Great Britain and Ireland, and was President of the Royal Academy of Medicine in Ireland during the years 1894 to 1897, inclusive. His popularity may be gathered from the fact that he was an elected member of five distinctly exclusive clubs—Dublin University, Kildare Street, and the Friendly Brothers of St. Patrick, in Dublin; and the Athenæum and the Junior Carlton in London.

His most important published works were “First Steps in Clinical Study” and a brochure on “Diseases of the Heart,” but his busy professional life left little time for writing or for literary effort on a large scale.

Of his domestic life his biographer, Sir Charles A. Cameron, writes as follows in his “History of the Royal College of Surgeons in Ireland” (2nd edition, 1916, p. 613):—

“DR. LITTLE married in 1872 Anna, daughter of Robert Murdoch, an eminent solicitor. For forty-two years she managed his domestic affairs, was his wise adviser in all difficult situations, took an interest in all that affected him, and ever strove to brighten and render happy his strenuous life. She died at Sidmouth, Devonshire, on 24th March, 1914.

“DR. LITTLE has two sons and one daughter. The elder son, James, is an M.A. of Oxford and Dublin, and a member of the English and also of the Irish Bar. He resides in London. [He is member for Central Finsbury on the London County Council.] He is married to Ina, only child of J. Walker Craig, M.A., K.C., Recorder of Belfast. The younger son, Eric Archibald, was educated at Rugby and at Trinity College, and is an M.A. and M.D. of Dublin University. He is a solicitor, but does not practise, being an official of the Probate Court. He is unmarried. [He is at present serving at the Front in France in the Royal Army Medical Corps.] The daughter, Lydia Catherine, is married to Guy Lyddell, C.E., who now holds a commission in the Royal Engineers.”

It may strike the reader as strange that the distinguished subject of this Memoir should have remained

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plain "JAMES LITTLE" throughout his brilliant life. But it is an open secret that DR. LITTLE was offered a title by the Sovereign on more than one occasion, yet with characteristic modesty and studied courtesy he declined the proffered honour, preferring to remain "DR. JAMES LITTLE"—a professional title which he valued above all others.

In him the writer of this Memoir has lost one of his oldest, most faithful and best friends—a man whom to know was in itself an honour, whom to claim as a friend was a privilege and a "possession for ever."

J. W. M.

AN ULSTER APPRECIATION.

In the *Belfast Newsletter* for Tuesday, December 27, 1916, the following glowing and eloquent appreciation of DR. LITTLE appears from the pen of his friend, Professor Jas. A. Lindsay, of Queen's University, Belfast:—

"A pang will strike through many hearts at the announcement that JAMES LITTLE is no more. By his death Irish Medicine loses its most prominent personality, its most beloved figure. He has passed away at the ripe age of 80, full of years and of honours, leaving a gap in Irish social and professional life which will be difficult, if not impossible to fill. He retained to the end the full enjoyment of his faculties, his capacity for work, and his zest for life. His shrewd insight, his professional acumen, his kindness and sympathy, his interest in medical science, his genial temper and his hospitable spirit remained with him to the last. Few men have more fully lived their life or left a deeper impress upon their contemporaries.

"DR. LITTLE's success as a practitioner was rapid and phenomenal. For many years he enjoyed an enormous practice, and his services as a consultant were sought in all parts of Ireland. Patients found in him insight, sympathy, and helpfulness in no common degree. His powers of diagnosis were great and always at command, and he was a versatile and resourceful therapeutist. In his knowledge of human nature, his capacity to understand his clients, not simply as patients, but as suffering

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men and women, DR. LITTLE has seldom had an equal. The glance of his kindly eye and the touch of his sympathetic hand brought hope and comfort to many an afflicted patient. He once asked the writer of these lines, 'What is the best qualification of a doctor?' and gave his own answer, 'Hopefulness.' He was a ready and incisive speaker, and no man could make a more appropriate, tactful, and humorous after-dinner speech. As a host he excelled, and many can recall the delightful hospitality which he so freely dispensed at his house in Stephen's Green. On such occasions he was not only the genial host, but the charming raconteur and the nimble wit. He was full of playful bandinage and interesting reminiscences of all the men and events associated with him in the course of his long life. His wit was always good-natured, never bitter or mordant, his anecdotes always free from any trace of gall. For many years he took a long autumn holiday in various parts of Ireland, and gathered round him at the country houses which he temporarily occupied a circle of friends in whose society he delighted. He was fond of riding, and continued to ride his favourite cob until nearly the last.

"DR. LITTLE did not make any large contribution to medical literature. He was the author of two small books—'First Steps in Clinical Study' and 'Chronic Diseases of the Heart.' His life was too strenuous and too full to leave much leisure for authorship. DR. LITTLE touched life at many points, and he will be mourned alike as a man of affairs, a skilled physician, and a kindly, generous, and sympathetic friend. His relations with his own professional brethren were cordial. His upright character and high standard of professional honour gained him universal respect.

"His death will bring sadness and a sense of loss to many hearts, but not without some countervailing sentiment of satisfaction at the contemplation of a strenuous and successful life, fully lived and no doubt fully enjoyed.

"Nothing is here for tears, nothing to wail
Or knock the breast, no weakness, no contempt,
Dispraise, or blame, nothing but well and fair,
And what may quiet us in a death so noble."

"J. A. L."

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

FEBRUARY 1, 1917.

PART I. ORIGINAL COMMUNICATIONS.

ART. V.—*The Deformity of the Feet in Friedreich's Hereditary Ataxia.* By F. C. PURSER, M.D. Dubl.; F.R.C.P.I.; Major, R.A.M.C.; Visiting Physician to Mercer's Hospital, Dublin.

No adequate explanation has been found of the deformity of the feet, which is so constant a feature of Friedreich's ataxia. The deformity, though very characteristic, is not pathognomonic of this condition, and has been recorded in other diseases, such as tabes dorsalis and disseminated sclerosis. The difficulty in finding an explanation is not lessened by the uncommon occurrence of the disease itself, and is complicated by the fact that the deformity varies with the progress of the disease.

Déjérine considers the deformity to be due to atrophy of the muscles of the foot and of the front of the leg. Others regard it as a "stigma of degeneration," or a developmental defect. The former explanation, while partly valid in the advanced stages of the disease, when muscular weakness has supervened, must be positively wrong in the early stages, when no muscular weakness can

be detected. The latter explanation is a plausible hypothesis, but is itself defective in development. No adequate explanation is possible at present, and it is probable that developmental defects or abnormalities do play some, as yet inexplicable, part in its occurrence. Bing, in his Text Book of Nervous Diseases, gives a hint—it is little more—that the deformity is due, in part, to muscular efforts made in “balancing,” and I propose to amplify this hint a little. I had tried to explain the deformity to my class in hospital in this way, before Bing’s book was published, and I was glad to see the same idea under the authority of so well recognised an author.

The particular case of Friedreich’s ataxia which I had in mind was that of a man of 19 years of age. A younger brother, who had never been able to walk properly, had died—“of the gastric”—in childhood. My patient had for several years walked queerly, but for only about two years had he been seriously incommoded. As he said: “Getting comfortable boots was all the trouble he had.” As well as a very ataxic gait and difficulty in standing (without much added difficulty when his eyes were closed); he had absent knee-jerks and a doubtful dorsi-flexion of the toes on stroking the soles (Babinski’s sign), and horizontal nystagmus. His arms, articulation and mind were unaffected. I noted a slight hesitancy in appreciating position in the toes. The deformity of the feet was very well marked, and equally in each foot. The hollow of the sole was very pronounced, and all the toes were dorsiflexed at the metatarso-phalangeal joints and flexed at the inter-phalangeal joints. There were callosities on the dorsum of some of these latter. His legs were well developed, and even powerful, and he could move his toes very strongly. When standing in his bare feet one noticed that the tendons stood out forcibly, and that the part of the pads of the toes that came in contact with the ground was nearer to the nails than normal.

In general terms, the pathology of Friedreich’s ataxia consists in defective communication between the cere-

bellum and the peripheral nervous system. The defect is congenital, and pretty equal at all levels of the cord.

The cerebellum being the chief centre for co-ordinating movements, co-ordination is impaired in proportion to the defect in its communications with the periphery. But inco-ordination due to defective automatic control can be compensated to a large extent by increased attention, and to the largest extent by attention in those movements over which there is the greatest voluntary control. There is greater voluntary control over the movements of the lower limbs than over those of the trunk, still greater voluntary control over the muscles of articulation and of the upper limbs. In Friedreich's ataxy inco-ordination is *the* symptom, and its order of onset is first in the trunk, then in the legs, last in the upper limbs and in the muscles of articulation. The course of the disease is progressive, but it is very slowly progressive, and often many years elapse before the patient is helpless. In such a case the inco-ordination may be for a long time noticeable only in the muscles of the trunk, which normally preserve the standing or walking frame in an easily poised, upright position. To counteract the progressive swaying the lower limbs are called in—to enlarge the base of support outside of which the centre of gravity of the body must not sway. So the patient keeps his feet abnormally far apart, and he contracts all the muscles of his feet and legs to make his foot as rigid as possible. One can best see what such a person does with his feet by trying to stand oneself on one foot. When the inevitable swaying begins, the muscles of the foot come into play strongly, and the toes are drawn tightly up towards the metatarso-phalangeal joints, and pressed firmly on the ground. This in itself gives a broader base of support, for normally one stands on the foot, using the toes only as a sort of outrigger.

It is not unreasonable to suppose that this perpetual over-activity of the muscles moving the foot may act in some cases for several years before standing and locomotion become impossible; and the early age at which

the disease begins implies soft and pliable skeletal tissues, which can be moulded gradually into an abnormal shape.

Bing thinks that the dorsi-flexion of the proximal phalangeal joints may be due to constant stimulation of the soles—a sort of persisting Babinski's sign. And he has seen this aspect of the deformity disappear under rest in bed.

Later on, gradual weakness of the muscles of the leg comes on, the patient becomes bedridden, and between the weakness (and the weight of the bed-clothes), pes equinus or equino-varus supervenes.

While this suggestion is not unreasonable in cases of slow progress, in which the patients have learned to walk, it is not valid in a case where the patient has walked little, or not at all. And cases of this kind with deformity of the feet seem sufficiently numerous.

ART. VI.—*A Case of Tuberculosis of the Genital Organs transmitted from Husband to Wife.*^a By DR. SPENCER SHEILL, F.R.C.P.I.; Ex-Assistant Master of the Coombe Hospital, Dublin.

IN submitting details of this somewhat unusual and interesting case, I wish to say that portion of the information was supplied to me by a medical friend in the country who prefers to remain anonymous. His care and skill are well known, and any of his findings may be relied upon as being as accurate as possible.

Mr. A. B.—the gentleman concerned—visited his medical adviser complaining of frequent and painful micturition. He had been discharged from one of the Services with a diagnosis of tubercular disease of the bladder. A consultation with an expert surgeon was held, when the right kidney was found to be enlarged and tender, and deposits

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland on Friday, November 10, 1916.

—probably tubercular in origin—were found in the right seminal vesicle and epididymis. A little later, in order to confirm the diagnosis, tuberculin was injected. The reaction was positive—the temperature rising to 102° F. His kidney was removed very shortly afterwards, and it proved to be very markedly tubercular.

Mrs. A. B. consulted the doctor at the same time as her husband made his first visit. They were then married just five weeks. Previous to her marriage she enjoyed excellent health. Her complaint was “a tender and painful swelling in the groin,” and examination revealed three large and tender lymphatic glands in that region. Careful examination excluded any syphilitic or gonorrhœal infection.

Per vaginam nothing abnormal was found other than some undue tenderness in the broad ligament and ovary on the same side as the enlarged glands. A von Pirquet test proved positive, and a little later she showed a positive reaction to T. B. injection—her temperature rising to 101° F.

She underwent a course of tuberculin injections during which all signs and symptoms of her disease abated. This is well over a year ago now and she remains apparently cured.

Although I will admit that it could be argued that this patient would have developed tuberculosis of the genitals had she never married, I think the circumstantial evidence to be sufficiently strong to justify the opinion that the disease was transmitted by coitus from husband to wife, a theory not, in my opinion, too far-fetched when one contemplates semen from a known tubercular vesicle, being injected directly into the os of an apparently healthy person.

The case certainly opens up the large question of State interference on the subject of marriage of the tubercular, especially if the site of the disease happens to be the genital organs. In the meantime, there is food for thought on the part of the medical man who might

be consulted by a tubercular person contemplating the married state.

[The above is exactly as the paper was read before the Royal Academy of Medicine in Ireland. During the discussion following, it was pointed out that without proof of *local* reaction in the inguinal glands following tuberculin injection, the case was not proved to be one of genital tuberculosis. I have since then elicited from the doctor concerned that there was "marked local reaction," and the omission of this fact from the paper was due to inadvertence on my part.—S. S.]

ART. VII.—Impressions during a Short Period of Active Service with the Royal Army Medical Corps. By MAJOR W. I. DE COURCY WHEELER, M.D., B.Ch., F.R.C.S.I., Honorary Surgeon to the Forces in Ireland.

In this paper it is intended to give in a general way my impressions of the Surgical and Medical organisations in France and, while avoiding details, to relate some experiences by way of illustrating the *rôle* of a surgeon on short, temporary duty with the Royal Army Medical Corps. An invitation which the War Office had been good enough to give me on July 20th to visit and inspect the Hospitals in France in a civilian capacity was withdrawn at my request, and instead, a week later, I was ordered by telegram to proceed on duty with the Royal Army Medical Corps. Having reported, and while awaiting orders a visit was paid to the various hospitals in Boulogne.

With the exception of a few hotels, some French shops and residences, the entire town is transformed into a huge base for the wounded. Some of the hospitals, so far as the number of beds is concerned, approximate in size all the hospitals in Dublin put into one.

Innumerable motor ambulances are collected at dépôts in the town, convoys of which are seen at all hours of the day and night very slowly carrying wounded to the hospitals on the arrival of the ambulance trains.

A day or two spent at the hospitals is sufficient to demonstrate the superb organisation which has created a medical service efficient beyond description, the machinery of which runs like a well-oiled engine, without hitch, from the trenches to the base.

A great proportion of the war surgery at home is orthopaedic. Stiff joints, divided nerves, various contractures, occasional aneurysms, ununited fractures, conical and misshapen amputation stumps, occupy the mind of the surgeon, and his endeavour, however long the treatment, is to procure permanent and useful results.

In France, a surgeon's care is of a different kind. His work is, first of all, life saving. As for instance, the rapid flapless amputations in cases of gas gangrene, the ruthless routine excision of wounds and wide removal of the lacerated tissues in order to forestall gas and virulent pyogenic infections.

The management of secondary haemorrhage demands, as of old, the utmost surgical ingenuity.

The direct transfusion of blood in cases of haemorrhage and sepsis is gaining favour, and appears to justify the belief that not only is it of advantage in supplying the required fluid, but that blood directly transfused has a beneficial effect in septic and toxic conditions.

There is still a third type of surgical work to be found near the front at the casualty clearing stations, differing as much from the surgery at the base in France as the latter does from the work at home.

The surgeon in a casualty clearing station must be a man of prompt action. He must decide instantly the indications for primary amputation, laparotomy, trephining, &c. On him lies the responsibility if a life is lost through gas infection, or secondary haemorrhage the result of delayed operation. On him rests the decision as to whether transference to the base is desirable or will be a fatal delay. While many abdominal perforations and brain injuries may be transferred to a base with safety, others if not operated on instantly lose the only chance of recovery. The difficulty of drawing a border line is

obvious, but yet there must be no delay in deciding to which class a case belongs. Thus, the responsibility of surgeons, always great, appears to be unusually heavy for those employed at the casualty clearing stations.

It would be impossible in a general communication of this kind to even mention all the novel surgical procedures which have been evolved to cope with the war wounds as seen in France. Many of the innovations have not yet seen the light of day in the journals, and many procedures are quite revolutionary in character.

The Dakin-Carrel method of treating wounds by the injection of Dakin's solution every two or three hours into the dressings by means of specially prepared rubber tubes has resulted in the possibility of converting violently septic compound fractures into simple fractures in a few days. Each day a film examination is made of the wound, and when micro-organisms have been reduced to a negligible number, secondary closure is undertaken with success.

The administration of a known percentage of warm ether vapour automatically by an elaborate machine attracts the imagination of a visitor to the Harvard University Unit. In other institutions a similar apparatus is extemporised at a small cost, and the result of the anaesthesia has fulfilled expectations. The method is clean, the vapour is warm, and by means of an oxygen cylinder can be administered without attention on the part of the anaesthetist. This is an important advantage where there is a shortage of men in a rush at a casualty clearing station, for the anaesthetist is frequently called upon to perform venesection for the introduction of saline solution during the operation.

Spinal anaesthesia is largely employed in some hospitals in conjunction with general narcosis, following the principle of Crile. In others, especially at the front, it is used without a general anaesthetic. Here patients are so tired when first brought in from the trenches that they sleep without the employment of ether, provided they are secured from pain by the employment of novocain or stovaine.

Blood-pressure readings and blood examinations were made in every severe case. It was found, *inter alia*, that when spinal anaesthesia was used in a case with a reduced haemoglobin index, the result of haemorrhage, an alarming fall of the blood pressure often took place. In cases without haemorrhage, such did not occur. Again, it was noted that if during or at the end of the operation a patient was turned on his side, a severe fall of blood-pressure followed.

A publication of these investigations is to be made in full, and will show the great value of blood-pressure readings during all forms of anaesthesia.

Chest wounds were, as might be expected, accompanied by haemato-thorax. X-ray photographs showed this condition admirably; but it was necessary, if an accurate picture of the fluid was to be obtained, to have at least one photograph taken in the erect position. X-ray plants were modified in many instances to fulfil this purpose.

Exploratory puncture of the chest was a routine expedient, and the blood or fluid collected was examined by film and culture. If the fluid was sterile, the case was treated expectantly; if micro-organisms were found, even apart from clinical indications, the pleura was usually drained. In some hospitals siphon drainage was insisted upon. The tube in the pleural cavity was secured to the chest wall by rubber dam or accurate stitching, so as to be air-tight. A second tube, carrying a stream of water from a douche, was connected by a "T" piece with the tube in the chest. It was the familiar device often used at home for vesical drainage. In other units, however, it was pointed out that an air-tight drain in the chest could not be maintained for more than two or three days, and on this account siphonage was not attempted. The treatment of foreign bodies in the knee-joint with bad infection was a subject of much controversy. It was, of course, recognised that drainage was impossible, and if attempted was disastrous.

Mild infections were treated by extension, aspiration and injection of glycerine and formalin, or ether, as is the custom at home

Foreign bodies without infection were, as a rule, removed and the joint closed ; but in the severe cases of injection the choice appeared to rest between primary excision and amputation. Excision was performed for the purpose of drainage, and the tibia and femur were kept wide apart by weight extension. When sepsis subsided the bones were allowed gradually to come together, and ankylosis followed.

One naturally felt some misgivings as to the final stability of a joint so treated, but it was generally a case of " Hobson's choice."

Not infrequently a wound involving the knee-joint was excised with the surrounding capsule and synovial lining, without drainage. This operation succeeded in selected cases.

Fractures were, as a rule, treated with some modification of the Thomas's splint, with fixed extension.

One wonders why it needed an European war to see the value of the teaching of Robert Jones and the futility of the many wooden arrangements, purposeless in design, which we used to treasure under the name of splints.

Having seen the work of others for a week at the base and become more familiar with military system, we received orders to join the staff of a large general hospital, where the surgeon in charge of the division was, owing to an accident, confined to bed. Ten minutes after arrival we were operating on a case of acute appendicitis.

When not at high pressure, there is a normal amount of " civil " surgery to be dealt with in these hospitals. Thus, we spent days with cases differing in no way from the routine hospital practice at home.

Many hernias, varicoceles, chronic appendix cases and various minor bony ailments were disposed of with local anaesthesia. In one case of haemorrhoids we departed from the routine infiltration of novocain, and passed the needle upwards and backwards into the sacral canal. We injected 25 cc. of 2 per cent. novocain solution, and complete anaesthesia of the anal region quickly followed.

There was no difficulty in inserting the needle just above the junction of the coccyx with the sacrum. The proper site for the insertion can be easily felt with the finger, and the curve of the sacrum limits the introduction of the needle to the necessary level.

In the case of left-sided cerebral hernia with right-sided paralysis and aphasia, I had some success by doing a decompression operation on the opposite side. These cases, as a rule, are treated by repeated lumbar puncture under general anaesthesia, the pressure of the cerebro-spinal fluid being carefully estimated by a simple device at each operation. Locally, the hernia is often painted with pure formalin or alcohol.

The daily life in this hospital being novel was of great interest. Military system and discipline and routine administrative efficiency were fascinating to one accustomed to the topsy-turvydom of private surgical practice. The medical officers were for the most part newly-joined civil practitioners of considerable reputation. They and the commanding officer were proud of a unit which ranked high amongst the hospitals in France. Attached to this hospital was one of the famous "jaw huts," where the treatment of fractured jaws and the reconstruction of shattered faces, after appalling wounds, was conducted along lines approaching the miraculous.

It was part of my duty to see these cases from the purely surgical point of view. Thus, Major K., who was responsible for the artistic reconstruction of faces by mechanical ingenuity, passed on his cases to me for the treatment of secondary haemorrhage and for any necessary plastic operation.

No mental picture can be formed of the appalling secondary haemorrhage which follows in these cases. Scarcely a day passed without a catastrophe of this kind occurring in the "jaw hut." The patients were pitiable to behold. The features of some blown out of recognition by hand grenade, trench mortar, or other destructive engine. The ingrained dirt, which by a gradual process

often took weeks to remove; the mouth and anterior and posterior nares often thrown into one with a common opening on the surface; the lips only remaining attached to the face by pedicles of skin; and the lower jaw in five or six pieces. It is to such a case that one is hurriedly summoned to check the bleeding from the facial, lingual, dental and other arteries. The administration of an anæsthetic under such conditions is better imagined than described. The ligature of the external carotid, undertaken under great difficulties, as often as not only partially controls the haemorrhage, and when the operation is temporarily successful bleeding often recurs within the space of a few minutes. Tying of the common carotid artery is followed by hemiplegia in a number of cases. Thus, it can be seen that the question of haemorrhage in these cases is one of great perplexity. The exposure of the common carotid and compression between the finger and thumb often give sufficient time to deal with the bleeding locally. The common carotid was encircled with a piece of loose catgut with long ends, and the wound in the neck closed, leaving the catgut buried. If haemorrhage recurred the wound was quickly opened, the end of the catgut found, and the artery tied.

There were five cases of local tetanus treated in this hospital during the time I was attached. The condition is a curious one. Thus, a young soldier wounded superficially in the back near the upper border of the scapula with a piece of shrapnel developed tetanus in the corresponding arm. On approaching the bedside the muscles of the arm violently contracted and stood out, as if trying to lift an enormous weight above his head. There were no constitutional disturbances whatever, and the man, but for this local condition, was in perfect health. Thus, it can be seen that an extraordinary amount of interesting surgical material filled the hospitals at the base.

For about a fortnight I had the privilege of working at and seeing the work of a casualty clearing station. It was a hut hospital, capable of accommodating some 300 patients.

I expected to find a place where everything surgical would be improvised; where the methods would, of necessity, be rough and ready, and instead, I found a well-founded hospital, staffed by surgeons of exceptional skill, and equipped with all that modern surgery could require.

One tent was devoted to the immediate treatment of gas cases, and oxygen could be administered to 30 or 40 patients simultaneously from the same cylinder, by an ingenious arrangement improvised by the commanding officer.

The results of operative treatment were striking. Thus, a case with multiple abdominal lesions, necessitating a resection of intestines, suture of the stomach and exploration of the kidney, with a compound fracture of the femur thrown in, would the following day appear bright and well.

Here are examples of the type of cases to which I refer:—Private D. (Canadian), admitted on August 28th. Fracture of the lower jaw, fracture of both forearms, abdominal tenderness, and suspicion of gross intra-abdominal lesion. Catheter specimen of urine contained blood. Abdomen became more rigid in a few hours, but pulse remained between 80 and 90. No vomiting. Following morning patient's aspect worse. Rigidity more marked; vomiting had commenced, and was repeated several times; general appearance suggestive of peritonitis. Patient unable to pass water since admission, but catheter passed every four hours, resulting in the withdrawal of quantities of urine, varying from a pint on the first occasion to a few ounces at other times. Blood was present on only the first occasion. I operated on August 29th, with the assistance of Captain M. A large rent was found in the upper surface of the bladder, the abdomen was full of urine, without odour. The rent was stitched by layers of catgut and the abdomen closed with suprapubic drainage. On each occasion the catheter had gone through the rent in the bladder, and the urine had been drawn from the general peritoneal cavity.

The first diagnosis on the admission of this patient was ruptured bladder, but the result of catheterisation unfortunately led to uncertainty and delay.

Notwithstanding the multiple injuries and the delay of twelve hours before operation the patient did well.

Sergeant H., Welsh Fusiliers, was admitted on August 26th. He had been hit by a "whiz bang." He had a clean scalp wound beneath his steel helmet, running transversely across the region of the superior occipital curved line. He was conscious and bright, and but for the fact that he was blind an intra-cranial lesion would scarcely have been suspected.

The patient was anaesthetised with warm ether vapour, as was the excellent custom in this clearing station. The scalp wound was excised in the routine fashion in order to lessen the danger of gas gangrene, and the bone was freely exposed. A very small depression could be seen to the left of the occipital protuberance, and an almost imperceptible fissure ran obliquely through the bone downwards and to the left. The skull was rapidly opened by Hudson's drill, and the opening enlarged for several inches with nibbling forceps. There was no visible pulsation, and the dura was purple in colour from subdural haemorrhage. On opening the dura the brain was found pulped, and with the relief of tension literally flowed out of the wound with clotted blood. Quite a large portion of brain was helped away with the aid of a spoon. The lateral sinus was wounded, and two forceps were left *in situ* for two or three days in order to control the resultant bleeding. The interesting points about this case were the absence of any compression symptoms in the presence of marked intra-cranial tension; and secondly, the rapid recovery of sight after an operation in the occipital region entailing the loss of much brain matter. The day after fingers could be counted, the next day articles held before him could be recognised, and his recovery was progressive at the time I left.

With thousands of cases passing through it is difficult to even touch on the great variety of wounds requiring treat-

ment. At home we see the wounded only after elimination of the most acute cases, in a casualty clearing station every case is "an emergency," and each case, the wounds being frequently multiple, represents half-a-dozen emergencies.

The results of surgical treatment are impressive at the base, but they are astonishing at the front, even though the mortality is of necessity high. The widest resection of intestines, the high amputations at the hip, and lacerated wounds of the lung often run a course which never gives a moment's anxiety to the surgeon in charge. Unless a man is moribund, his life is never dispaired of, and with ever so little help the most severely wounded seem to make for recovery in a manner unknown at home.

It must not be thought there is no recreation for those on surgical duty in France. Even with heavy casualties, the work being all concentrated in one place can be rapidly finished. The orderlies are highly skilled in the preparing of patients for operation, and are, in addition, skilled theatre "sisters."

My visit to France concluded with an inspection of two field ambulances between the clearing station and the trenches, a collecting station, and an advanced aid post in the trenches. We made the journey equipped with gas helmets and steel helmets in an armoured ambulance as far as it was possible to travel over shell-torn roads. I was told that, notwithstanding the craters over which it seemed daring to proceed, that convoys of motor cars were driven each night without lights over these same roads by drivers who could instinctively locate every dangerous crevass.

In conclusion, I would like to record my feelings of pride at belonging, especially in an honorary capacity, to a Corps which has accomplished such wonders in the present war.

Admiration of all I saw has, I fear, induced me to trespass on ground which by right belongs to those medical men in civil practice who have sacrificed much by prolonged service in the hospitals abroad.

ART. VIII.—*A Note on Fibroids and Pregnancy.*^a By
BETHEL SOLOMONS, M.D., F.R.C.P.I.; Gynæcologist
to Mercer's Hospital, Dublin.

I do not wish to enter in this paper into a dissertation on fibroids complicating pregnancy, but merely to raise a few points which have struck me whilst operating during the course of the past few years.

In dealing with this subject the first question which arises is—do myomata cause sterility? In Kelly's series about 50 per cent. were sterile. If one is to judge by the number of cases of sterility which one meets, which are due to causes other than myomata, one is inclined to answer that while the presence of myomata causes sterility, the latter state is more frequently caused by other factors, such as tubal disease, &c. If one is consulted by a woman who wishes to become pregnant and in whom one diagnosticates fibroids it is extremely difficult to decide on a diagnosis. Subserous and interstitial myomata are often removed with the object of curing sterility but except in the cases where there is marked displacement, the results of these operations are usually negative. Where the case is more difficult, and the myoma is found growing into or from the uterine cavity the removal of such tumours leaves the patient in a better condition for the pregnant state. Great care must be taken in these cases to stitch the endometrium back into its place before sewing up the muscular walls of the uterus; otherwise severe and sometimes fatal haemorrhage may occur. I have attended patients in their confinements in whom at least one-third of the cavity has been taken away with the tumours and I await the onset of labour after these large myomectomies with utmost confidence.

The next question that arises in regard to possible pregnancy after myomectomy is the suture material. I use No. 4 iodine catgut. It has been suggested that a parallel might be advanced in the case of Cæsarean section

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, December 8, 1916.

where most gynaecologists use silk. There is no similarity in the two cases. In the former there is no involution and if the operation is properly performed the uterine wound should heal by first intention : in the latter case there is of course a great strain on the sutures. I have found that the best results in myomectomy are obtained by stitching the peritoneal surface of the wound by means of continuous button hole sutures.

When pregnancy occurs in a uterus which contains myomata—what is the result? It is a well-known fact that myomata during pregnancy hypertrophy. Abortion or premature labour may terminate the pregnancy. If the tumours are situated in the pelvis they may become incarcerated and gangrene may result or even the rectum may get compressed. Red degeneration is a serious complication. Some give no trouble whatever. Submucous fibroids may become twisted and later gangrenous, or else they may become separated and get delivered. Although some authors have reported the complete disappearance of tumours, most authorities deny such a phenomenon.

It is impossible to lay down hard and fast rules for the treatment of myomata in pregnancy. The rational treatment can be summed up in a few words. If the tumour is likely to give trouble during parturition, extirpate it. If not, leave it alone. The case which I am about to report demonstrates most forcibly one of the difficult problems of obstetrics. The following is the history :—

CASE.—Mrs. B. McG., aet. 40, married 7 months, was referred to me by Dr. Flood, of Bundoran, and was admitted to Mercer's Hospital on September 12, 1916. She was an anaemic-looking woman and had no previous medical history beyond the fact that she had had Alexander-Adams operation performed in America two years before. She had consulted her doctor because of very great pain in the left side. The menstruation had been of 28-day type, lasting seven days, and rather heavy. The last menstruation occurred on June 17, 1916. On examination the diagnosis of three months' pregnancy, complicated by myomata, was

made. I advised the patient to have a laparotomy performed, and informed her that I would endeavour to remove the tumours and leave the pregnant uterus, but that the necessity for removing both uterus and tumours was probable. I made clear the fact that after opening the abdomen, I might find it necessary to close it, and let her chance going to full term. On opening the abdomen myomectomy was found to be out of the question, while her chance of carrying the baby to full term was impossible; therefore the uterus and a cystic right ovary were removed, whilst the left ovary, which contained small cysts, was resected. The convalescence was uneventful, and the patient left the hospital in a fortnight. The specimen consisted of a three months' pregnant uterus containing myomata, some of which invaded the cavity. There were several with pedicles, but the majority were incorporated in the uterine wall.

In a case such as this there was no other course open, as myomectomy was impossible. If nothing had been done, what would have happened? (1) She might have aborted. (2) She might have gone to full term, when the necessity for performing Cæsarean hysterectomy would have arisen. (3) Any of the other complications already mentioned might have arisen. Her chance of going to full term was very remote. Apart from other considerations, the left-sided pain had become nearly intolerable, and the examination of the specimen showed the impossibility of such a proceeding. The treatment by *x*-rays would not have had any effect in a case of this kind, but the rays might have brought on an abortion. If myomectomy is performed during pregnancy, the consensus of opinion is that although the operation is often desirable, the chance of miscarriage is very great.

In labour at full term myoma may act as a grave complication. When situated in the cervix, it may definitely obstruct; when in the body, it may cause inertia and *post-partum* haemorrhage. If the myoma is cervical and pedunculated it may be removed, or it may be pushed past

the presenting part. If sessile, the danger of performing myomectomy is marked, because of haemorrhage, and Cæsarean hysterectomy is the operation of choice. If the myoma is corporeal, it should be left alone unless there is dystocia, when it should be removed if pedunculated, and Cæsarean hysterectomy should be performed if sessile.

During the puerperium the myoma may slough, or red degeneration may occur. In the presence of any degeneration hysterectomy should be performed.

To sum up the conclusions from this short note :—

1. When myoma causes sterility it is usually submucous in variety; but myoma is one of the least common causes of sterility.
2. When performing myomectomy with pregnancy in view, if the edges of the wound are approximated carefully with No. 4 iodine catgut, the confinement may be approached with confidence.
3. After myomata are removed during pregnancy, miscarriage is a common outcome. When multiple fibroids complicate pregnancy hysterectomy is usually necessary.

ART. IX.—*Excision of the Elbow for Gunshot Injuries.*^a

By R. ATKINSON STONEY, F.R.C.S.I.; Médecin Majeur 2ème Classe; Consulting and Operative Surgeon 6th Section 17th Region; Visiting Surgeon Royal City of Dublin Hospital.

HAVING had the opportunity while working in France during the last two years of both performing the operation of excision of the elbow for gunshot injuries and of seeing the results of operation at periods varying up to eighteen months, I venture to bring this subject before you for consideration.

One of my earliest hospital recollections is seeing a man who had had his left elbow excised by the late Mr. H. G. Croly shown to the class at the Royal City of Dublin

^a Read before the Section of Surgery in the Royal Academy of Medicine in Ireland on Friday, November 24, 1916.

Hospital. He was a sailor, and had continued his occupation since the operation, which had been performed some three or four years previously. He had movement of the elbow through an angle of about 140 degrees, and the muscular power was sufficient to flex or extend the joint against the force of any one of the students present. Even at the present day this would be considered as a very good result, and it must be remembered that this operation had been performed in the very early days of antiseptic surgery. The following is a brief history of the cases under my care :—

CASE I.—A Zouave was shot on September 20, 1914. The missile, probably a deformed rifle bullet, struck the left elbow joint, smashing the bones extensively. When first seen by me in December he was discharging from several sinuses on the posterior aspect of the joint. These healed up under treatment. An *x-ray* photograph showed osseous ankylosis of the joint at an obtuse angle, with great deformity of the lower end of the humerus and upper ends of the radius and ulna, with numerous small fragments of metal embedded in the bones. Operation was performed on January 15, 1915. About one inch of the humerus was removed, and the olecranon was prized off. and the upper end of the ulna trimmed; no attempt was made to remove the ends of the bones of the forearm along the normal saw cuts, owing to the great destruction and irregular formation of the bone ends and the fear of opening up quiescent septic foci in the neighbourhood of the embedded pieces of metal. A very slight infection occurred in this case, but it rapidly cleared up, and the wound healed completely. At first we had some difficulty in getting the patient to move his arm, and he complained of pain over the upper end of the ulna which projected under the skin, so on March 24 the projecting piece of the bone was chiselled off, and the opportunity was taken at the same time to forcibly move the joint. After this regular massage and electrical treatment were undertaken, and the range of voluntary movement was rapidly in-

creased ; the patient left the hospital in about six weeks, with voluntary movement of about 110 degrees. When I returned to France last summer I had an opportunity of seeing this patient again. He had been discharged from the Army, and was working in a munition factory. He could use his left arm for his work, and could flex and extend his elbow against very considerable resistance. The range of movement was from about 40 degrees of flexion to 160 degrees of extension. There was only slight power of pronation and supination, the radius and ulna moving together as there was bony union between their upper extremities.

CASE II. was a soldier who had been wounded in September, 1914, by a shrapnel ball which had entered the left elbow from behind through the olecranon, and was lodged in the soft tissues in front of the joint. A septic arthritis had followed, and in March, 1915, the joint was ankylosed at a right angle, and a suppurating sinus still existed. On March 5, 1915, my colleague, Dr. Meade, excised the elbow, removing the humerus above the condyles and also the olecranon and top of the coronoid ; the head of the radius was not touched. The cavity was douched with carbolic lotion and packed with iodoform gauze, and sewn up in the usual way. In spite of transient infection the wound healed rapidly and soundly. Within a month of the operation this patient had very fair voluntary movement of his joint.

CASE III.—Soldier wounded, March 16, 1916, by shell, there was osseous ankylosis of the right elbow at an angle of about 130 degrees. The *x*-rays showed an old fracture of the olecranon and the formation of callus in front of and behind the lower end of the humerus ; pronation and supination were completely lost as well as flexion and extension. Operation was performed on the 22nd of July, 1916. The olecranon and condyles were cleared and the olecranon was separated from the humerus by the chisel ; the lower end of the humerus was dislocated

through the wound and sawn off above the condyles, and the corners were rounded off. There was some difficulty in clearing the ulna and radius, owing to callus formed in the anterior ligament, the articular bearing portions of both bones were removed at the level of the lower border of the head of the radius, after which pronation and supination became possible. This case healed without infection, and massage and electrical treatment were commenced within ten days of the operation, and by the end of a month the patient was able to lift his hand to his mouth. When I left the hospital in the beginning of September he had voluntary movement through an angle of about 130 degrees, and was already able to use his arm for feeding himself and writing. There was limited movement of pronation and supination.

CASE IV.—Soldier wounded February 25, 1916, by a grenade in the left elbow. There was osseous ankylosis of elbow with irregularity of the articular surface of humerus, and fragments and dust of the grenade were scattered through the bones and soft tissues; all the sinuses which had been present were healed. Operation was performed on August 31, the bones were cleared, and the radius and ulna separated from the humerus by the chisel. The end of the humerus was sawn off just above the condyles, the corners were rounded off, and the head of the radius and the articular surface of the ulna were removed, leaving the orbicular ligament and its attachments intact. In this case infection occurred and necessitated frequent dressings, syringing with Dakin's solution and drainage. The last account I heard, however, nearly a month after the operation, was that the wound was almost healed and there was already fair voluntary movement. This man had been operated on, in a hospital close to the front, to fix the elbow in this position as being the most useful one for a farm labourer, which was his occupation.

In older war surgery an important distinction was drawn between primary and secondary excision of the elbow, the results of primary excision being much the

better. The late Sir William McCormac, in his "Notes and Recollections of an Ambulance Surgeon," which he published after the Franco-German War, gives as his results one death in four cases of primary excision, whereas there were 5 deaths in 7 secondary operations. In the present day I imagine that a typical primary excision is never done, the practice adopted being to wait and see whether an excision will become necessary after healing has occurred. The nearest attempt to a primary excision that came under my notice was the following :—On March 10, 1915, I was called to see a soldier who had been wounded in the left elbow by a shrapnel bullet on February 28, 10 days previously. There was a large suppurating wound over the external condyle of the left humerus. The wound was enlarged and explored, and over a dozen pieces of bone, some nearly half-an-inch in size, were removed; the external epicondyle was broken, but still attached by muscles; the internal condyle, head of radius and olecranon were apparently uninjured. The wound was swabbed with carbolic and iodine, and packed with iodoform gauze. This case did well and recovered with a moveable joint. But it will be seen that it was only a very partial excision, and was not performed till 10 days after the injury.

In civilian practice the chief indications for excision of the elbow are :—I., ankylosis, fibrous or osseous, resulting from injuries, usually fractures of the bones entering into the formation of the joint, the most frequent being fractures of the lower end of the humerus; and II., cases of tubercular disease of the joint. It may occasionally be required in III., cases where ankylosis has resulted from a septic infection of the joint, but these cases are rare. In civil practice, therefore, it is unusual for sepsis to be present, and with ordinary precautions there is no reason to fear infection after the operation, the wound should heal without suppuration. In military surgery the conditions, however, are very different. Here the ankylosis of the joint resulting from gunshot injuries

is nearly always accompanied, if not actually caused, by sepsis, and even if the operation is not performed until after the tissues have apparently soundly healed, there is always a grave danger that during the operation some encapsulated and quiescent septic focus will be opened up, and the large cavity in the tissues left by the excision of the joint will become infected and lead to prolonged suppuration with its attendant formation of cicatricial tissues.

During my stay in France, I gathered that the results of this operation among the French were so far from satisfactory, that in cases of fibrous ankylosis every effort was made to obtain even a slight degree of movement by prolonged treatment with mechanotherapy, and in cases of osseous ankylosis it was recommended to make a linear section of the bones and put the arm up in the position most useful for the particular occupation followed by the individual. For the left arm of a labourer—for instance, as in Case IV.—fixation at an angle of 130 degrees was recommended. This certainly cannot be looked upon as a counsel of perfection and with less than this the medical profession should not be satisfied.

I am firmly convinced that excision of the joint is the proper treatment for all cases of osseous ankylosis and the majority of those of fibrous ankylosis, at least those where it is unlikely that 90 degrees or more of movement will be obtained, or where this result has not already been attained after a reasonable trial of mechanotherapeutic measures.

The operation must, however, be performed by a competent surgeon who has had some experience of this particular operation, and certain precautions must be taken.

Of the various incisions which have been suggested for this operation, by far the best is the vertical posterior incision of Pott. In this connection I was interested in coming across the following passage in the late Sir William McCormac's "Notes and Recollections of an Ambulance Surgeon." In describing a case which had

been admitted to the Anglo-American Ambulance, he says :—“ The joint had been cut out through a transverse incision, across its posterior aspect; there was no attempt at repair, and the wound was a large hole, into which one might almost put a closed fist. The forearm was only attached to the arm by a narrow isthmus of skin and muscle in fact; we received some other cases of resection of the elbow which had been performed elsewhere in this manner—that is, by a transverse in place of a longitudinal incision. The men told us that they had been operated upon by German surgeons, but the method adopted is one which would find little favour in this country.”

Again, he says :—“ The operator had cut transversely across the back of the elbow from one side of the limb to the other, sacrificing the ulnar nerve, of course, and making a huge, unsightly wound.”

The incision is carried through all the tissues down to the bone, splitting the triceps, muscle and tendon in the upper half, and the deep fascia and periosteum covering the olecranon and posterior border of the ulna in the lower half. This is the most important step in the operation, and the one where most mistakes are made. In order to obtain a useful arm afterwards it is absolutely necessary to maintain the attachment of the triceps to the deep fascia on the back of the forearm, and unless great care is taken in raising the periosteum from the back of the olecranon there is grave danger of this continuity of tissue being lost. This is the only part of the operation that need be done subperiosteally. The other steps of the operation are comparatively simple, the tissues on either side of the incision are separated from the bones, special care being taken on the inner side to avoid injury to the ulnar nerve; the bones of the forearm are then separated from the humerus by division of the lateral ligaments and fibrous tissue in cases of fibrous ankylosis and by the chisel if there is bony union, and the ends of the bones are dislocated out of the wound, and sawn off. As little as possible of the bones of the forearm should be sacrificed,

the bicipital tuberosity of the radius and the coronoid process of the ulna being preserved at all costs; in ideal cases only the portions of the bone covered by cartilage need be sawn off. It matters little how much of the humerus is removed, the danger of removing too little is greater than the danger of removing too much. The saw cut should always pass above the epicondyles; and probably a good result might be obtained even in a case where the humerus had to be sacrificed in its lower fourth. The danger of removing too little is that ankylosis may persist unless an arthroplasty according to Murphy's method is performed instead of a simple excision. It might here be suggested that an arthroplasty was the preferable operation; its disadvantages are that it entails further dissection and separation of the tissues which is most undesirable in these cases, which, as explained, are liable to infection; owing to this liability to infection, there is also a danger of sloughing of the flap of fibrous or fatty tissue which is inserted into the joint between the ends of the bones; again, this flap has to be introduced into the joint between the edges of the divided triceps, and may, therefore, interfere with their proper union and the later recovery of function by the triceps muscle. Finally, if the operation of simple excision is correctly performed a perfect functional result may be obtained.

The operation is concluded by ligature of all bleeding points, considerable oozing will always persist both from the cut ends of the bones and the divided tissues, and this is best controlled by tight packing of the cavity with iodoform gauze. The two edges of the triceps and its continuation into the periosteum and fascia of the forearm are united by a continuous suture of catgut, except for a small opening left for the emergence of the gauze; this should preferably be placed at the upper end in the muscular portion of the incision, so as to insure good union of the periosteum and fascia with its poorer blood supply.

The skin may be closed by Michel's clips or silk-worm gut sutures.

Usually the gauze packing may be left for 48 hours before removal, by which time liability to continuation of the oozing has ceased, the edges of the wound may be kept separated for a few days longer by a small gauze mesh, and the cavity gradually obliterated by pressure of a voluminous dressing. In cases where sepsis supervenes it will be necessary to use a rubber drain and wash out the joint cavity with eusol or other lotion daily, but even here complete closure can usually be obtained within a month or five weeks.

In my experience no splint is required in the treatment of these cases, the joint is surrounded with a thick layer of wool extending high up on the arm and low down on the forearm, and held in position by a tightly applied bandage. Sir William McCormac says :—“ Unless for purposes of transport, it is not often necessary nor even, I consider, desirable to apply splints of any kinds to excisions of the elbow joint. The after purpose of the operation is to secure free motion in the new articulation, and the arm and elbow can usually be adequately and well supported by pillows. I myself never used any form of splint after excision of the elbow, and I found that great comfort to the patient and great facility in applying new dressings were thereby secured.”

An essential point in the after-treatment is massage and electricity, which should both be adopted at an early stage to obtain a return of the function of the triceps and biceps which are paralysed from long want of use. As seen by the history of Cases II. and III. in favourable circumstances good voluntary movement may be obtained within a month after operation ; and after an interval of a year or so the patient's arm may be to all intents and purposes as strong and as useful as ever.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Medical Diseases of the War. By ARTHUR F. HURST, M.A., M.D. (Oxon); F.R.C.P.; Temporary Major, R.A.M.C.; Physician and Neurologist to Guy's Hospital; Neurologist to the 3rd Southern General Hospital; lately Member of the Medical Advisory Committee Mediterranean Expeditionary Force, and Consulting Physician to the Salonica Army. London: Edward Arnold. 1917. (All rights reserved.)

WE strongly recommend this little book to all officers of the R.A.M.C. whether temporary or permanent, and to all those who are doing medical war work. Within the compass of about 150 pages, the author has concentrated all the essential information concerning the symptoms and treatment of those medical disorders that have been brought into special prominence by the war. From personal experience in a large military hospital the present reviewer knows that there is a distinct demand for a work of this sort, and he feels sure that its publication will provide a distinct help to many a newly-joined medical officer and to the patients under his care.

With most of the writer's opinions we are in complete agreement, but here and there he expresses views which we think require some modification. For example, in the treatment of paratyphoid fever he recommends a "generous diet" which, indeed, he carefully specifies as consisting only of milk puddings, custard, eggs, and bread and butter. This diet may be safe in experienced hands, but we are quite sure that in many cases we have seen ill results from its use, and even at the risk of prolonging the convalescent period we prefer to recommend

for general use an almost exclusively milk diet, while reserving our opinion that in very mild cases more food may be given with advantage. In dealing with the serum treatment of bacillary dysentery more stress should be laid on the importance of large doses of serum. Personally, we seldom give less than 60 to 80 c.cms. as an initial dose, and in cases that are at all severe such doses should be repeated. It is the mild cases in which "20 c.cms. serum are sufficient" that are likely to relapse. Again, in amoebic dysentery even the mildest cases should have a course of 10 to 12 grains of emetine if the danger of their becoming cyst carriers is to be avoided: while in cyst carriers a course of ipecacuanha by the mouth in addition is often required. Amongst the late sequelæ of amoebic dysentery is one of which we find no mention, but which was not at all uncommon in Egypt during 1916. We refer to post-dysenteric chronic meteorism. These cases are at first very puzzling, and are very intractable to treatment. We hope that a further edition will provide some information concerning them. Lastly, in the treatment of chronic diarrhoea due to *Lamblia* we think that insufficient stress is laid on the necessity for a preliminary rest in bed for about a week. Although we have made these few criticisms we have nothing but praise for this little book. We repeat that we feel sure that it will fill a decided want, and we think the writer has done his country an important service in writing it.

T. G. M.

The After-treatment of Operations. A Manual for Practitioners and House Surgeons. By P. LOCKHART-MUMMERY, F.R.C.S. (Eng.), B.A., M.B., B.C. (Cantab.). London : Baillière, Tindall & Cox. 1916. Fourth Edition. Cr. 8vo. Pp. 283. 39 Figures.

THE fact that this book, which was first published in 1903, has now reached its fourth edition is sufficient proof (if one were wanted) that it fills a definite place in supply-

ing information to a certain class of the medical profession. The aim of the author is not to describe the after-treatment in great detail of all kinds of cases or to enter into vexed questions of different methods of treatment, but merely to give a short account of the complications that may arise in the more simple cases, and how they may best be met by the house surgeon or general practitioner, to whom the after-management of the case has been entrusted. In the present edition much new matter has been added, and the whole book well brought up-to-date. The chapter on surgical shock has been completely rewritten, and a short chapter has been added on the treatment of gunshot wounds, which should prove useful under the present circumstances. The question of posture after operation is fully considered, and it is clearly pointed out that the popular idea of the necessity for the dorsal recumbent position is much exaggerated, and that many cases will not only do as well but often far better in either a lateral or semi-recumbent position.

A small appendix gives directions for rectal, nasal, and subcutaneous feeding, and also explains the composition and uses of various diets.

We are convinced that the popularity of this book will be further enhanced by the production of this, the fourth, edition.

Pulmonary Tuberculosis in General Practice. By HALLIDAY G. SUTHERLAND, M.D. Edin. London : Cassell & Co., Ltd. 1916. 8vo. Pp. xvi. + 290. VI. Plates and IX. Charts.

AT the present time the prevention of tuberculosis in its various forms is one of the most pressing problems awaiting solution by Public Health Authorities. The condition of affairs is far from satisfactory. The disease is very common, the death rate of it is very high, and as a cause of loss in efficiency it probably occupies the highest place among diseases. While this is so our knowledge of the

life history of the disease, of the methods by which it is spread, and of the means necessary to combat its spread, is perhaps more complete than is the case in any other disease. The disease is undoubtedly preventable, why then is it not prevented? It appears to us that there are many reasons why this is so. It is important for medical men continually to bear in mind the importance of seeing that none of that blame can be attached to them. In the past, medical men have pointed out with almost monotonous reiteration the steps that must be taken for the prevention of tuberculosis, but yet some of the most obvious of these steps have not been taken. For this medical men cannot accept any blame. We fear however that this very feeling of virtue may lead the profession astray. We fear that there is a tendency among many medical practitioners to neglect the study of those diseases which at the same time are very common and which run a very chronic course. We are satisfied that in the teaching of students neither tuberculosis nor syphilis occupies the position which their commonness and importance demand. The medical student of to-day is the practitioner of to-morrow, and if he has not been well grounded in the knowledge of these diseases as a student, is he likely to be able to do his part in their prevention and treatment as a young practitioner?

What can the young practitioner do to prevent tuberculosis? There are two main sources of infection in tuberculosis: from food, and from an infected tubercular patient. With regard to infection from food he can do little. As long as the State allows the dairyman to supply to the poor, milk that is infected with tubercle bacilli, the medical man cannot hope to prevent the spread of the disease. He has pointed out the danger but his warning has been neglected. With regard to the prevention of infection from person to person the case appears almost as hopeless. It is here, however, that the medical man can do something, and more, perhaps, than he has done in the past. By the recognition of tubercular disease

in its earliest stages much may be done. In every disease the importance of its early recognition has been insisted on, but the physician cannot recognise the disease till the sick person presents himself for examination. This in many cases is when the disease is well advanced. In the case of tuberculosis, however, it is possible to seek out the patient before that patient is aware that he is ill. It has now been demonstrated that by the examination of "contacts" it is possible to recognise the existence of tuberculosis in many persons who feel perfectly well. If this is so it surely becomes the duty of the physician when called to see a tubercular patient, to suggest at least the importance of a careful examination of every member of his family. This duty, we fear, is too often neglected.

In the book before us Dr. Sutherland has pointed out this duty, he has shown us what to look for and how to look for it. If we find it he tells us what to do for it so that its dread progress may be stayed. It is because he tells us these things, and tells them to us in a clear and interesting way that we recommend every physician to study this book with care if he wishes to do his part in one of the greatest battles of life.

T. P. C. K.

When to Advise Operation in General Practice. By A. RENDLE SHORT, M.D., B.S. B.Sc. (Lond.), F.R.C.S. (Eng.); Examiner for First F.R.C.S.; ex-Hunterian Professor; Lecturer on Surgery, University of Bristol; Senior Assistant Surgeon, Bristol Royal Infirmary; Surgeon to Clifton College; Captain R.A.M.C. (T.). Bristol: John Wright & Sons, Ltd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Toronto: The Macmillan Co. of Canada, Ltd. 1916. Pp. 279 + vi.

As the author says in the preface, "an attempt is made in this little volume to set forth fully yet concisely the indications for operation in ordinary cases, excluding anomalies and rarities." We have no hesitation in saying

that this attempt has been successful, and that the book should prove a real help to the general practitioner, and will well repay his careful study. The indications laid down for operative treatment are, we are told, largely obtained from the data collected in the "Index of Prognosis and End-results of Treatment" recently edited by the same author. No space is wasted in discussing those conditions where everybody is agreed that operation is necessary.

The first chapter is devoted to appendicitis, and the whole question of operation for this affection is very clearly explained, and the advice which is given is on the whole very sound.

The chapter on diseases of the breast commences with the aphorism : "Any lump in a woman's breast is better out than in"; and further on the author says : "If there is a lump in the breast, explore it; the practical problem is not when to operate, but when not to operate. If this were duly understood by the general practitioner how many cases of death from cancer of the breast would be avoided every year?" Each chapter ends with a short summary, explaining the salient points, and the book is freely illustrated by short case histories from the author's experience. The writing is free, and though perhaps sometimes a trifle too colloquial in expression is read with ease and enjoyment. The book may be recommended not only to the general practitioner, but to all newly-qualified men, no matter to what branch of the profession they may intend devoting themselves.

The American Year-book of Anæsthesia and Analgesia.
1915. F. C. McMECHAN, A.M., M.D., Editor. New York : Surgery Publishing Company. 1916. 4to. Pp. x + 419.

In America modern surgical anæsthesia was first discovered, and ever since American writers and workers have kept in the forefront in the investigation of this

important part of medical practice. For a long time Year-books have been popular with the profession. At first they dealt generally with the whole subject of medicine and surgery, but lately there has been a tendency to publish special Year-books dealing with the various specialties. On the whole we think the later tendency is the better, and so we welcome this, we believe, the first Year-book on Anæsthesia. It is hoped that the papers published in the Year-book will represent the work, not only of Americans, but of persons of all countries. The great European war has, to some extent, limited the international character of the present issue. We have, however, some thirty-one papers presented to us, chiefly dealing with research work in connection with anæsthesia. These papers in themselves contain a wealth of information, and are supplemented by elaborate and full bibliographies of the subjects with which they deal. Their value is in consequence great, and anæsthetists the world over must be grateful to the editor for the assistance he has given them. We at all events cordially welcome the Year-book, not only for what it contains, but for what it promises, and for the incentive which we feel sure it will give for good work. We trust that it will receive that large measure of support which its worth merits, and which will ensure its annual appearance.

T. P. C. K.

The Sexual Disabilities of Man, and their Treatment and Prevention. By ARTHUR COOPER, Consulting Surgeon to the Westminster General Dispensary; formerly House Surgeon to the Male Lock Hospital, London. Third Edition, Revised and Enlarged. London : H. K. Lewis & Co., Ltd. 1916. Crown 8vo. Pp. viii. + 227.

THE fertility of the psycho-physical department of human speculation and inquiry which has been set apart for the cultivation of the innumerable problems and puzzles of

sexual functions and sexual relationship, would almost seem to have increased—and with progressive expansion—ever since the original promulgation of the first commandment, and the subsequent culture of the thorn-and-thistle-strewn loci of man's agricultural activities. And so it must evermore continue to be, as the most dominating—"preferential"—calls of human nature shall always successfully claim the earliest share of attention. And inasmuch as man's gastric appetite was conferred on him by a mysterious Providence in order to safeguard the physiological preservation of the individual, while the sexual appetite was bestowed for the purpose of ensuring the preservation of the species, the respective claims of these must always receive the largest proportion of attention—even so long as the body and spirit of *Homo sapiens* continue to display their original qualities. And the most demonstrative instance of the universal application of this cosmic rule is to be found in the genesis and development of the present cosmopolitan war. As a leading trans-Atlantic medical journal phrased the gruesome fact, at an early date of the world-struggle referred to, "unrestricted increase of the birth-rate will always end in food for bullets in the long run." Depressingly appropriate, too, is the fact that the present work, of which the progressive popularity has proved the original pressing need, is an expansion of a translated German monograph. As usual—during the past few decades—while endeavouring to cultivate the peace and prosperity which we had come to look upon as the natural heritage of cultured and civilised humanity, we passively allowed ourselves to be far outstripped by our more wide-awake and more prophetically observant neighbours, in providing for the Malthusian necessities of the future; and in educating a receptive community by exposing in all their nakedness, however repulsive, the pathological as well as the physiological facts with which increasing populations must inevitably be brought into more pressing—and often crushing—contact. In these, our formerly "fortunate islands" of pro-

gressively increasing prosperity and philanthropy, and unquestioned equality (of voting power), we have come to find our political (as well as a large proportion of our medico-chirurgical) leaderships entrusted to, or seized by, the most confident quacks of their respective departments.

Of the contents of the present tripartite volume, the third division is new : it deals with the very important subject of the "Prevention of Sexual Disabilities." The first and second parts are expansions—brought down to date—of the contents of their predecessors.

The *Introduction* has been carefully thought out and worded, and the author appropriately indicates the vastly increased importance of his subject which must necessarily be transmitted as a legacy of the present world-struggle. We noted, with some mnemonic awakenings, the statement that : "it has long been known that a man may be able to perform the sexual act to his own complete satisfaction, and yet be quite incapable of begetting children." In the course of the famous "Bagot Case"—which made plutocrats of some attorneys in the past generation—the only surgical F.R.S. in Ireland affirmed on oath that "a man himself is the best judge as to whether he is capable of being a father or not."

The first and second chapters deal with the semen—physiological and pathological—in a manner distinctly suggestive of Teutonic thoroughness, and the happy reference to the curious illusion of the inspired Epicurean poet (who, by the way, is said to have died on the day on which "the Divine Maro" was born) is an interesting illustration of the original writer's elevated mental standpoint, and consequent wide range of mental vision.

We are fully prepared to agree that "though zoosperms may be present in old men, it would seem that they do not always possess fertilising power." We have seen the statement made somewhere that William Harvey, who made the *post-mortem* examination of the cadaver of the celebrated *Old Parr*, actually found his seminal tubes full of spermatozoa ! The writer appears to accept the view of

Krafft-Ebing : that “ reproductive powers usually cease about the age of 62.” We do not dissent, actively ; but surely the limiting age varies greatly with the individual. The discussion of aspermin dependent on double epididymitis recalled sadly inspiring memories of the brilliant clinical teaching of a physician of our own far-away student days, who sometimes—with aggressive cynicism—confided to his class the fact that his own unproductive marriage was due to the fact that he had, in his unruly student days, himself suffered from double epididymitis.

The writer does not appear disposed to attach much importance to the peculiar destructive action of the *x*-rays on spermatoblasts. He refers to that attributed to some hypnotic drugs, and also to carbon disulphide. We feel disposed to affirm that the action of such drugs as opium—when not taken in excess—is of a nature to prolong the time of the sexual act (an effect studiously sought for by the luxurious Oriental) ; or, in the language of the accomplished author of the *Religio Medici*, to “ spin out the motions of carnality.” Specialists—and especially neurologists—should permanently bear in mind the fact that the action of all nerve stimulants (of which the most notable are *alcohol* and *opium*) is very legitimately comparable to that of the “ blower ” which we all used in our college days to increase the chimney draft, and therewith the light and heat dependent on the combustion of the material which filled the grate. If overdone (overdosed) the waste was soon evident, the ash accumulated, and the flame inevitably sank. The balance of anabolism and katabolism had tilted in the opposite direction.

A good deal of sensible advice is given under the headings of so-called spermatorrhœa and prostatorrhœa. The writer quotes Dixon Mann, who contradicts the popular idea that seminal emission “ is especially common in death by hanging.” We would suggest that the idea became “ popular ” in the “ good old days ” when hanging was used as the *anæsthetic* preparatory to the “ capital ” operation : it is certainly less likely to occur under the conditions of our

long-drop "instantaneous" philanthropy. On page 101 stands a sentence which could surely bear re-writing : "In acute gonorrhœa there is *often increased sexual desire*, with frequent and painful erection and sometimes (*sic*) chordee." (The italics are ours.)

There is a great deal of sound common-sense advice given under the head of "Treatment": we cheerfully suggest that one of the soundest (and most truly philanthropic) items is: "that the days of indiscriminate urethal instrumentation have, or ought to have, gone by."

Part III. of the present edition—which is wholly new and original—surely displays no internal evidence of any falling-off from the usually sound theory and practice of the Teutonic exemplar. Yet we would emphasise our own opinion that he takes the absurdities of Freud far too seriously. The idea of thumb-sucking (which every one of us has practised in his day)—as "pleasure-sucking" is surely too coarsely idiotic for scientific discussion—however worthy of the inventor of the preposterous "theory of dreams." Another German Jew tells us that "nurses sometimes touch, stroke and stimulate the genitals of children to keep them quiet, or *for the gratification of their own lustful feelings.*" The italics are ours—and the statement thereby indicated is, unfortunately, far too true.

A good deal of sound advice is given on the subject of school-boy life, and moral training and hygiene. The inevitable subject of "Perversion" is introduced towards the end; "Venereal Diseases" bring up the rear. Is it by accident that all "practical" writers seem to avoid printing the fact that gonorrhœa always tends to self-cure—in a previously healthy genital tract—in the absence of alcoholic stimulation; and also the fact that the "true" infecting chancre destroys completely one, and *only* one, structure of the human frame, when it happens to develop there? Can spirochætology explain this latter very singular clinical "freak?"

Clinical Methods. A Guide to the Practical Study of Medicine. By ROBERT HUTCHISON, M.D., and HARRY RAINY, M.D. Sixth Edition. London : Cassell & Co., Ltd. 1916. Cr. 8vo. Pp. xiii + 664, 14 Coloured Plates and 147 Figures in the text.

THE new edition of this popular hand-book is thoroughly revised and brought up to date. The chapter on Clinical Bacteriology has been re-written by Prof. James Ritchie, and there are careful directions how to take material for the preparation of bacterial vaccines. Where anatomical structures are referred to the Basle nomenclature is given in brackets after the older names.

WORKS ON PHYSIOLOGICAL CHEMISTRY.

1. *The Essentials of Chemical Physiology, for the use of Students.* By W. D. HALLIBURTON, M.D., LL.D., F.R.S. Ninth Edition. London : Longmans, Green & Co. 1916. Demy 8vo. Pp. xi + 324.
2. *The Problems of Physiological and Pathological Chemistry of Metabolism. For Students, Physicians, Biologists, and Chemists.* By DR. OTTO VON FÜRTE. Authorised Translation by ALLEN J. SMITH, Professor of Pathology and of Comparative Pathology in the University of Pennsylvania. Philadelphia and London : J. B. Lippincott Company. 1916. Demy 8vo. Pp. xv + 667.

1. HALLIBURTON's well-known text-book for the use of students is such a long-established favourite, that the appearance of a ninth edition needs only a brief notice.

The first edition dates back to 1893, and every two years or oftener, a new edition has found its footing.

The task of revision has been carefully carried out, and, among the new sections introduced, attention may be particularly called to the ninhydrin reaction ; the urease

method for estimating urea; and the Lewis-Benedict method for determining the sugar in blood. The ninhydrin action was discovered by Ruhemann. He found that all acids containing a free amino-group in the *a* position react with the tri-ketohydrindene hydrate (ninhydrin) with the production of an intense blue colour.

This test will detect 1 part of glycine in 65,000 parts of water, but it is characteristic only in the absence of ammonium salts and of aliphatic (fatty) amines.

The book is full of interest and is stuffed with information. Yet we cannot help speculating where is to be found that model student who could in the turmoil of his varied tasks master 300 large 8vo pages upon a single subject.

2. THIS bulky volume is a striking contrast to the preceding one. The treatise is based upon 25 Lectures addressed to students of biological chemistry, and its aim is to present the subject of normal and pathological metabolic chemistry as a broad and connected whole. This volume represents only the second part of the original German edition, the first volume of which dealt with the "Chemistry of Tissues." The book is ponderous both in weight and style, and we doubt if it will largely appeal to English readers.

Much of the ground has been occupied, and, in a far more interesting manner by other treatises, *e.g.*, those by Bayliss, Plimmer, and Wells.

The translator's style of English is decidedly Teutonic.

In his Preface one sentence wearis the eye by covering no less than 17 lines between one full stop and the next.

The task of compilation was an arduous one and represents an enormous amount of toil.

The book is swamped with an overwhelming mass of details and abstracts of literature, among which it is difficult for the reader to wend his way, and it is wanting in clear summaries.

In short, it is a valuable work of reference, and will be found useful by physiologists and clinical physicians, but

it would be almost ludicrous to expect "students" to face the perusal and study of a huge volume of nearly 700 pages. The proofs have been carelessly read, for there are an unusual and inexcusable number of misprints in the names of well-known authorities.

In spite of years of inquiry and experimental investigation many of the fundamental data of chemical physiology are still unsolved, and we have not yet arrived at certain knowledge of the sources and modes of formation of such important substances as urea, uric acid, and creatin. The author's suggestion to substitute the term *hemi-urates* for *quadri-urates*, is, we think, a good one. Gout still remains a stronghold for quacks and quackery, and we may reluctantly admit F. Umber's unedifying conclusion "that all the medicinal methods introduced with the view of increasing uric acid elimination, of determining solution of uratic deposits, or, of limiting the formation of uric acid, are entirely worthless." Something, undoubtedly, can be done in the way of diet.

I. K. Therapy (Immunkörper, Immune Substances) in Pulmonary Tuberculosis. With a Summary of Cases and Forty-two illustrative Charts. By WILLIAM BARR, M.D., D.Sc. (Glas.); D.P.H. (Camb.). Bristol : John Wright & Sons, Ltd. 1916. Demy 8vo. Pp. 82.

SOME nine years ago Carl Spengler of Davos came to the conclusion that animals infected with tuberculosis manufactured immune substances, and that these immune substances were stored in the erythrocytes. Acting on these conclusions Spengler injected living tubercle bacilli into the muscles of rabbits, and believed that he succeeded in inducing "a very high degree of bacteriolytic antitoxic immunity against tubercle bacilli." The blood of the rabbits so treated "is collected aseptically, diluted, acidified with lactic acid, and the bactericidal and antitoxic qualities are adjusted." The substance so obtained is the so-called I. K., and it is used to produce passive im-

munity in persons infected with tubercle bacilli. We do not pretend to be in a position to decide on the validity of Spengler's method of conclusions : it suffices to say that they have not been universally accepted by those who should be in a position to judge.

Dr. Barr brings the matter before us from its clinical rather than from its laboratory aspect. He has tried the method of treatment. He tells us how it is to be used, the indications for and against its use, and the results that he has obtained. He admits the difficulty of correctly estimating the value of those results, but he believes that on the whole they are satisfactory. The following remark makes one a little suspicious of his judgment. "Attendance for treatment is usually regular and prompt, and the fact that many of the patients persist in coming for treatment in spite of insufficient means is surely an indication that I. K. has in their view some intrinsic value ; and after all it is the patient who is the final judge." The method merits further research.

Yellow Fever Commission (West Africa).—A. Reports on questions connected with the Investigation of Non-Malarial Fevers in West Africa. Vol. III. London : J. & A. Churchill. 1916. Pp. 291. Figs. 27. Plates 29. B. Fourth and Final Report. Pp. 274. London : J. & A. Churchill. 1916.

THE Yellow Fever Commission, having sat for three years, has now produced its final report. In spite of the difficulties introduced by the war it has arrived at some valuable conclusions, although a number of problems still remain unsolved. Its duty was—"To study the nature and relative frequency of the fevers occurring among Europeans, native and others, in W. Africa, especially with regard to yellow fever and other non-malarial fevers in that country." This obviously gives a very wide scope for investigation, and has led to the following among other conclusions :—That malaria is the most widespread of the fevers met with ;

that yellow fever is endemic in the British and other Dependencies on the West Coast, and is probably maintained by the existence of endemic foci, rather than by a universal prevalence amongst the native population. The number of cases diagnosed has not exceeded 180 in the last six years, but should probably be much greater. There is no evidence that yellow fever has been introduced from outside Africa in recent years, and, apparently, when it attacks other parts of Africa it is much more virulent than on the coast, where natives, although not immune, usually suffer from a milder type of the disease than do Europeans. The other fevers identified were typhoid, para-typhoid, pappataci (sand-fly fever), and probably Malta and seven-days' fever, and possibly dengue; but these have not produced extensive epidemics in recent times.

Finally, the Commission states definitely that the virus of yellow fever is still unknown.

Food and the Principles of Dietetics. By ROBERT HUTCHISON, M.D. Edin., F.R.C.P. With Plates and Diagrams. Fourth Edition. London : E. Arnold. 1916. Demy 8vo. Pp. xx + 617.

MANY text-books dealing with dietetics have from time to time appeared, but we consider the book under review by far the best treatise on dietetics which has yet been published, and, since we first made its acquaintance some years ago, it has been our trusted book of reference.

It is an eminently sane and sensible book, the literary style is easy, and the greater part of it is both intelligible and interesting to any educated lay reader.

An excellent and instructive course of teaching for cooks and nurses could readily be framed upon it.

The whole work has been thoroughly revised, and a section has been added on the subject of Vitamines, those mysterious yet highly important principles in nutrients, which have thrown light upon some dark problems in physiology and pathology.

One minor and familiar fact may be referred to upon which the author feels still in doubt. Everyone knows that bread when kept becomes stale, and loses water. Yet the staleness is not entirely due to loss of water, for, as was long ago shown by Boussingault, one has merely to heat the loaf up again to a temperature of about 300° F. in order to restore much of its freshness, although the bread has thus obviously lost considerably more water than it had already lost by evaporation.

Various explanations have been offered, none of which appear convincing to the author.

In a recent paper by J. H. Katz, in the *Zeitschr. f. physiol. Chemie*, 1915, 95, 104, the phenomenon is explained as follows:—

What actually occurs is that the starch grains harden, and become less able to absorb water. The soluble polysaccharides contained in them are rendered insoluble, with the result that the bread becomes harder and less sweet.

The crumbly nature of stale bread is due to the transfer of water from the starch grains, as they harden, to the gluten, which lessens the adherence of the starch particles to each other. Exactly the reverse process takes place in baking. The absorptive power for water, and the proportion of water-soluble polysaccharides, is increased. Equilibrium is apparently attained at the baking temperature, and, as the temperature falls, the reaction goes in the reverse direction. Bread may be kept fresh for twenty-four hours if maintained at a temperature of 60° C. (140° F.) (*Science Progress*, October, 1916.)

New Zealand Medical Journal. October, 1916. No. 69.

Vol. XV.

THIS number of our contemporary is principally occupied by articles dealing with the R.A.M.S., which are interesting and valuable, but so much on the lines of similar contributions to our home journals that they do not call

for special notice. Besides these we have "Pitfalls in Practice," by Dr. Alexander Douglas, a very readable and interesting account of the "pitfalls" encountered in a busy and long practice. What strikes the reader in this country most in the article is the great frequency of hydatids in New Zealand, and the frequency with which they simulate other pathological conditions. He narrates illustrative cases showing how they were mistaken for pulmonary tuberculosis; caused serious heart trouble with displacement; necessitated Cæsarean section; simulated ovarian tumour; were diagnosed as appendicitis, and so forth. He makes it plain that every medical practitioner in New Zealand must be perpetually on his guard against hydatid disease in all abdominal complaints.

Forty-sixth Annual Report of the Resident Medical Superintendent of the Down District Lunatic Asylum, Downpatrick. 1916. Pp. 34.

THOSE of us who are in the habit of reading Asylum Reports have been somewhat curtailed in the pleasure derived therefrom during the past couple of years owing to the suspension of many of them due to a measure of war economy or to shortage in the numbers of the medical staff.

Although the latter factor at present exists in the case of Downpatrick Asylum, yet it is satisfactory that Dr. Nolan has not thought it necessary to follow suit in this respect, for his Annual Report is always eagerly read, and seldom does it fail to bring much profit to the reader.

Last year we drew attention to the marked decrease in the number of admissions to the Asylum, which fact tended to show that the war did not appear to have any deleterious effect upon the mentality of the people in the surrounding district.

Again is this decrease noticeable—for during the year under review, the admissions amounted to 130, being only one more than the number admitted the previous year.

Eight soldiers were admitted under the Army Act;

but the breakdown of not one of them is regarded as being attributable to the war *per se*—for in each there were others factors present.

The total numbers discharged were 64—34 men and 30 women. Of these, 56 had recovered—which gives a recovery rate of 43.1 per cent., calculated upon the admissions. This is a slight decrease compared with the year 1914, when the rate was 48.1 per cent.

The deaths amounted to 67—the percentage of deaths for the males being 8.8, and for the females 8.6. This percentage is calculated upon the daily average number resident. In 18 of the total number, tuberculosis in one form or another was the cause.

Quite the most remarkable feature of the Report deals with the financial situation.

The net average cost per head, deducting repayments of loans, receipts from paying patients and other miscellaneous receipts, was £22 16s. 8d., as against £23 14s. 6d. for the previous year.

This net average cost, according to returns to hand at the time, was £3 19s. 10d. less than the mean average of all Irish asylums, and was absolutely the lowest cost per head for the period under review.

In these days of war prices this very low rate of maintenance is of more than passing interest. It is accounted for by the fact that the Committee found itself in a very satisfactory position with regard to stocks in the general and divisional stores at the outbreak of the war. The full complement of equipment was held by every department and the stores contained a large reserve of all goods at pre-war prices.

It is satisfactory to note that the low cost has not been attained at the expense of the comfort of the patients for, as Dr. Nolan states, “drastic reductions, if attempted, would have defeated the *raison d'être* for the existence of the institution at all—the proper care and treatment of the insane.”

The Dietetic Treatment of Diabetes. By R. B. BASU, Major, I.M.S. (Retired). 7th Edition. Allahabad. 1916. Pp. 105.

THE chief points which the writer seeks to establish seem to be that diabetes is essentially due to an alimentary toxæmia, and that the dietary should be essentially a vegetarian one.

The book is poorly brought out, many careless misprints occur, and a large share of its space is occupied by lengthy quotations from other writers.

Transactions and the Annual Report of the London Dermatological Society. London: John Bale, Sons & Danielsson, Ltd. 1916. 8vo. Pp. 85.

THIS, the Fifth Annual Report, shows a creditable record of good work done by the members of the Society. The opening paper is of especial interest. It is from the pen of Dr. Shipley, Master of Christ's College, Cambridge, and is entitled "Insects and Camp Life."

It deals with such pests as lice, bugs, and fleas. The lecture was illustrated by a brilliant collection of lantern slides which must have been most instructive.

The other papers also are all of practical import, and we can recommend perusal of these Transactions to all our brethren whether specialists or general practitioners.

The last paper, by Dr. Bunch, gives an account of dermatitis due to hair-dyes. Medical men should be acquainted with the possible dangers attaching to the use of such substances, especially the two "aromatic" derivatives, *p*-phenyl-diamine, and *p*-amidophenol. A salt of the latter body, known commercially as *metol*, is extensively used in photography as a developer.

PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—R. D. PUREFOY, M.D., F.R.C.S.I.

General Secretary—J. A. SCOTT, M.D., F.R.C.S.I.

SECTION OF SURGERY.

President—W. TAYLOR, P.R.C.S.I.

Secretary—A. A. McCONNELL, F.R.C.S.I.

Friday, October 27, 1916.

Presidential Address.

THE PRESIDENT gave a short Address on his experiences in Renal Surgery. He stated that he had performed 138 operations upon 128 patients. These operations were—92 fixations, 26 total nephrectomies, 1 partial nephrectomy and 19 nephrotomies. There was one death in the series. After discussing various points of treatment, he came to the following conclusions :—

1. That where movable kidney is unquestionably the cause of the symptoms, or when the mobility is leading to actual pathological changes, nephropexy is preferable to any mechanical apparatus.
2. That calculi once diagnosticated should be removed by operation without delay.
3. That tuberculosis of the kidney is best treated by nephrectomy as soon as the diagnosis has been made.
4. That the prognosis of nephrectomy for hypernephroma,

if performed before secondary deposits have occurred, is exceedingly favourable.

5. That partial nephrectomy is an operation of very limited usefulness, but that under certain conditions it is a safe and satisfactory procedure. [The Address was published in full in the number of this Journal for December, 1916 (Vol. CXLII., No. 540, Third Series, page 361)].

Screening and Radium Dosage.

CAPTAIN WALTER C. STEVENSON read a paper with this title. He uses the total amount of ionisation effected on the tissue by the radio-active agent as his basis of measurement. The total amount of ionisation is obtained by multiplying the average amount of radium emanation used in a treatment by the time in hours it is employed, and by the proportion of activity remaining after the rays traverse the screen, as shown by the electroscope. He cited his experience with a patient having an extensive port-wine mark where a similar extent of superficial reaction, as far as could be judged by the naked eye, resulted from radiation without a screen, and with various thicknesses of lead screens, provided the loss of activity of the emanation due to screening was compensated for by longer exposure, so that the total ionisation was the same in each case. He pointed out the importance of the screening effect of the tissues on the uniformity of radiation, basing his contentions on electroscopic experiments with various thicknesses of beef, from 1 millimetre to 30 centimetre thickness. He found that lead had approximately ten times the screening power of animal tissues. As an illustration of an efficient dose, he alluded to a patient shown to the meeting, who, to all appearances, was cured for over a year of a tumour of the palate, 2 centimetres across, which was proved histologically to be a very malignant type of epithelioma. The patient was treated with six radium emanation needles for three hours, the dose being recorded as 23.3 (6) 3 = 70 millicurie hours. He pointed out that in the estimation of a dose, the cubic contents and shape of a tumour, the amount of screening and the number of foci of radiation used in a given area must *inter alia* be taken into consideration. Employing needles of a standard thickness of steel, the amount of screening from

them is constant, while the loss of activity due to the tissues—*i.e.*, the uniformity of radiation—depends on the distance of the needles from one another.

A Short Period of Active Service with the Royal Army Medical Corps.

MAJOR DE COURCY WHEELER read a paper (see page 86) on his experience and impressions while working for a short period with the Royal Army Medical Corps in France.

SECTION OF PATHOLOGY.

President—E. J. McWEENEY, F.R.C.P.I.

Secretary—T. T. O'FARRELL, F.R.C.S.I

Friday, November 17, 1916

DR. W. BOXWELL in the Chair.

The Pathological Findings in two cases of Hectic Fever.

SIR JOHN MOORE reported two cases of hectic, or habitual, fever which had come under his observation recently at the Meath Hospital and Co. Dublin Infirmary. The first patient was a trooper in a Hussar regiment, aged 29 years, admitted on September 3, 1916, very ill indeed. A certain tenderness on pressure in the appendix region, with dulness on percussion, rigidity of the neighbouring muscles, and a fulness, led to a suspicion of mischief in or near the appendix. The man's extreme weakness and emaciation forbade operation. Although the patient had neither cough nor expectoration, the family and personal history, in presence of a habitual fever, complete loss of appetite, and extreme wasting, suggested the probability of a generalised tuberculosis. A *post-mortem* examination by Dr. R. M. Brontë proved the case to be one of pyæmia. The vermiform appendix was gangrenous. It had been the seat of a chronic suppuration. The left kidney contained a large dépôt of pus. There were small multiple abscesses in the right kidney and in both lungs. The liver and spleen were enlarged, but otherwise normal. Cultures from the abscesses showed only *staphylococci*. The second patient was a young man of 22, a bootmaker. On admission on August 11, 1916, physical examination led to a diagnosis of right pleuritis, with commencing effusion. At no time had the patient any cough or

expectoration. His heart became daily weaker and its beat more frequent. Wasting and failing strength, accompanied by tremor, were prominent symptoms. The little toe of the right foot became gangrenous, and epileptoid attacks supervened. The continuance and the character of the pyrexia suggested an acute miliary tuberculosis, but crepitations did not appear in the lungs until a few days before death, on October 9. Somnolence deepened into coma at the last. The findings of a *post-mortem* examination by Dr. Brontë were as follows:—Acute pleurisy in both sides; disseminated tuberculosis of both lungs; the left lobe of liver overlapped, and was adherent to the spleen; the latter organ showed a large area of caseation. There was no enlargement of the mesenteric or mediastinal glands. The diaphragm and pericardium were studded with tubercles.

THE CHAIRMAN laid stress upon the importance of bringing the full clinical details as well as the *post-mortem* findings before the Section. The lesson learnt by having all the aspects of a case were useful in the elucidation of future cases. In the first case he regarded the abscess in the kidney region as being the primary cause of the pyæmia. He had had experience of several cases of pyæmia and septicæmia where the origin of the infection was obscure. He had no doubt that in some cases the site of entry was the tonsil, or that infection sometimes arose through extreme conditions of pyorrhœa alveolaris.

DR. T. T. O'FARRELL gave the details of a somewhat similar case of cryptogenetic septicæmia, which failed to be influenced by ordinary therapeutic measures. Blood cultures proved sterile, and the serum did not agglutinate either *B. typhosus*, *B. para-typhosus A.* or *B.* Cultures made from the throat revealed a pure culture of streptococcus. The administration of a vaccine, made from this micro-organism, was followed by an almost immediate amelioration of symptoms, and an apparent cure.

DR. W. M. CROFTON suggested that a bacteriological examination of the urine might prove of use in obscure cases, even when an examination of the centrifugalised sediment failed to reveal any gross pathological condition. He considered that the glomeruli played an important part in allowing the exit of micro-organisms. With regard to the second case, he had found the subcutaneous tuberculin test

of great value in diagnosis, but considered that much smaller doses than were usually given were quite sufficient to elicit a diagnostic reaction.

SIR JOHN MOORE, in reply, said that he regarded the kidney lesion in the first case was the primary cause of the pyæmia. He said that he had omitted to mention that there had been a previous history of injury in the region of the kidney.

A Primary Pulmonary Tumour

DR. POLLOCK showed the *post-mortem* specimens and microscopic preparations from this case. The patient was a woman, aged about 37, who developed a pain in the left side, together with a dry cough, practically devoid of sputum. Previous to her admission a correct diagnosis had been arrived at. An *x-ray* plate then showed an extensive shadow, occupying almost the entire left pulmonary area, together with a shadow corresponding to the upper right lobe. The pain increased in severity, and laryngeal stridor set in in addition. Soon after admission the patient succumbed. *Post-mortem* findings showed a tumour of peculiar pearly lustre and soft consistency supplanting the left lung—except for a small basal portion—and tending to envelop the heart. At no point was this tumour adherent, the entire mass being freely movable, like a normal lung, with the exception of the pulmonary apex. At this point it was necessary to tear through the tissue before removal was possible. A similar, but smaller, mass occupied the right upper lobe. The superior mediastinum was entirely free, and no connection appeared to exist between the left and right neoplasms. The sections showed a fairly constant grouping of many layers of large and small polygonal cells around spaces, suggesting lymph spaces or blood capillaries. Such an arrangement might be considered to correspond to the type of endothelial tumour, known as perithelioma. The presence of necrosis in these areas farthest from these spaces would support a belief that they were concerned in the nutrition of the tumour cells.

A Uterine Tumour for Diagnosis.

DR. POLLOCK also showed a uterus from a patient of about 60 years of age, who suffered for about nine months from haemorrhage and a rapidly-growing abdominal tumour,

which proved at operation to be an enlarged infiltrated uterus. No further details were provided with the specimen when sent to him. The tumour was of a sarcomatous consistency, composed of softish, buff-coloured masses. Microscopically, the most difficult and characteristic areas that could be found showed parallel channels, enclosed by cells of a somewhat spindle type, appearing to line these spaces, and based upon a definite stroma. Numerous blood vessels, together with haemorrhage, were also present. Other areas, again, contained small circular cells, with affinity for basic stain, arranged in loculi, and comparable to a carcinoma. He offered the specimen for a histological diagnosis.

The Section leaned to a diagnosis of an endothelial type of tumour.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF
PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about Two Hundred and Fifty Dollars, will be made on July 14, 1917, provided that an Essay deemed by the Committee of Award to be worthy of the Prize shall have been offered.

Essays intended for competition may be upon any subject in Medicine, but cannot have been published. They must be typewritten, and if written in a language other than English should be accompanied by an English translation. They must be received by the Secretary of the College on or before May 1, 1917.

Each essay must be sent without signature, but must be plainly marked with a motto, and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1916 was not awarded.

FRANCIS R. PACKARD, Secretary,
19 South 22nd Street, Philadelphia, Pa., U.S.A.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, December 30, 1916.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended Saturday, December 30, 1916, in the Dublin Registration Area and the eighteen principal provincial Urban Districts of Ireland was 23.8 per 1,000 of the aggregate population, which for the purposes of these returns is estimated at 1,122,268. The deaths from all causes registered in the week ended Saturday, December 30, and during the period of four weeks ended on that date, respectively, were equal to the following annual rates per 1,000 of the population:—Nineteen Town Districts, 23.8 and 21.2; Dublin Registration Area, 28.4 and 24.9; Dublin City, 28.7 and 26.5; Belfast, 21.3 and 19.6; Cork, 27.9 and 19.9; Londonderry, 14.3 and 14.3; Limerick, 14.9 and 18.3; and Waterford, 38.0 and 22.8.

The deaths from certain epidemic diseases—namely, enteric fever, typhus, small-pox, measles, scarlet fever, whooping-cough, diphtheria, dysentery, and diarrhoeal diseases—registered in the nineteen town districts during the week ended Saturday, December 30, 1916, were equal to an annual rate of 0.8 per 1,000. Among the 159 deaths from all causes in Belfast were 1 from measles, 1 from diphtheria, and 3 from diarrhoeal disease. Among 20 deaths recorded in Waterford was 1 from measles.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock and Kingstown. The population of the Area is 397,000.

In the Dublin Registration Area the births registered during the week ended December 30, 1916, amounted to 130—66 boys and 64 girls, and the deaths to 230—112 males and 118 females.

DEATHS.

The deaths registered, omitting the deaths (numbering 14) of persons admitted into public institutions from locali-

ties outside the Area, represent an annual rate of mortality of 28.4 per 1,000 of the population. During the fifty-two weeks ended with Saturday, December 30, the death-rate averaged 20.4, and was 0.8 below the mean rate for the corresponding portions of the ten years 1906-1915. The rate for all deaths registered during the fifty-two weeks was 22.0, while in the corresponding period of the preceding ten years it had been 22.5.

The 216 deaths appertaining to the Area included 1 from scarlet fever, 4 from measles, 2 from whooping-cough, 4 from influenza, and 5 from diarrhoeal diseases—all of children under two years old. In the three preceding weeks deaths from scarlet fever had numbered 1, 3 and 0; deaths from measles, 1, 0 and 2; from influenza, 5, 5 and 5; and deaths from diarrhoeal diseases, 3, 4, and 9 respectively. There had been no deaths from whooping-cough during the three preceding weeks.

Tuberculosis caused 29 deaths, as against 23, 8, and 23, respectively, in the three weeks preceding. Of the 29 deaths ascribed to tuberculosis, 23 were referred to pulmonary tuberculosis, 2 to tubercular meningitis, 1 to abdominal tuberculosis, 1 to tuberculosis of the joints, and 2 to disseminated tuberculosis.

Ten deaths were caused by cancer, 17 by pneumonia (7 by broncho-pneumonia, and 10 by pneumonia, type not distinguished), 20 by organic diseases of the heart, and 49 by bronchitis.

Six deaths were due to violence, including 3 caused by burns (2 of these deaths being of children under 5 years), 1 by drowning, and 1 by poisoning.

Among deaths of infants under one year old, 3 were ascribed to congenital debility, and 2 to prematurity. Forty-one of the deaths registered during the week appertaining to the Area were of children under 5 years of age, 24 being infants under one year, of whom 5 were under one month old.

Of the 216 deaths recorded, 79 occurred in hospitals and other public institutions.

STATE OF INFECTIOUS DISEASES.

The following returns of the number of cases of Infectious Diseases notified under the "Infectious Disease Notification

Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," have been furnished by the respective sanitary authorities:—

TABLE I.—SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area—(viz., the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock and Kingstown), and in the Cities of Belfast, Cork, Londonderry, Limerick, and Waterford, during the week ended December 30, 1916, and each of the preceding three weeks.

A dash (—) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Measles	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Diarrhoeal Diseases	Acute Poliomyleitis	Pulmonary Tuberculosis	Total
City of Dublin	Dec. 9	—	19	—	—	—	—	—	—	2	2	—	—	—	—	5	28
	Dec. 16	—	6	—	—	—	—	—	—	1	1	—	—	—	—	4	15
	Dec. 23	—	4	—	—	—	—	—	—	1	3	—	—	—	—	5	15
	Dec. 30	—	—	—	—	2	2	—	—	—	—	—	—	—	—	2	12
Rathmines and Rathgar Urban District	Dec. 9	—	3	—	—	1	1	—	—	—	—	—	—	—	—	—	5
	Dec. 16	—	1	—	—	1	1	—	—	—	—	—	—	—	—	2	2
	Dec. 23	—	1	—	—	—	—	—	—	—	—	—	—	—	—	2	2
	Dec. 30	—	5	—	—	—	—	—	—	—	—	—	—	—	—	1	5
Pembroke Urban District	Dec. 9	—	2	—	—	—	—	—	—	1	—	—	—	—	—	—	2
	Dec. 16	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
	Dec. 23	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	2
	Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Blackrock Urban District	Dec. 9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Dec. 16	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
	Dec. 23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kingstown Urban District	Dec. 9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Dec. 16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Dec. 23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City of Belfast	Dec. 9	—	10	—	—	—	—	5	—	2	5	1	—	—	—	—	23
	Dec. 16	—	14	—	—	—	—	5	3	5	5	—	—	—	—	1	28
	Dec. 23	—	5	—	—	—	—	5	8	4	6	—	—	—	—	2	25
	Dec. 30	—	3	—	—	—	—	—	—	2	1	—	—	—	—	—	11
City of Cork ^c	Dec. 9	—	2	—	—	—	—	2	—	2	2	—	—	—	—	1	9b
	Dec. 16	—	—	2	—	—	—	2	—	3	3	—	—	—	—	—	—
	Dec. 23	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
	Dec. 30	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	2
City of Londonderry	Dec. 9	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	5
	Dec. 16	—	7	—	—	—	—	—	—	—	—	—	—	—	—	—	7
	Dec. 23	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
City of Limerick	Dec. 9	—	1	—	—	—	—	—	—	—	2	—	—	—	—	—	1
	Dec. 16	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	2
	Dec. 23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
City of Waterford	Dec. 9	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
	Dec. 16	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
	Dec. 23	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	2
	Dec. 30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

^a Continued Fever.

^b Not including one case of varicella.

^c One case of cerebro-fever was reported during week ended December 16th.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Table II. exhibits the number of cases of certain infectious diseases treated in the Dublin Hospitals during the week ended December 30, 1916, and the number under treatment at the close of each of the three preceding weeks.

TABLE II.

Diseases	No. of Cases in Hospital at close of week ended			Week ended December 30.				No. under treat- ment at close of week
	Dec. 9	Dec. 16	Dec. 23	No. admitted	Dis- charged	Died		
Enteric Fever	51	42	37	4	11	—	—	30
Typhus —	2	—	—	—	—	—	—	—
Small-pox —	—	—	—	—	—	—	—	—
Measles —	5	7	5	3	1	1	—	6
Scarlet Fever	71	65	59	7	11	1	—	54 ^a
Diphtheria —	14	13	14	1	3	—	—	12
Pneumonia —	28	28	22	7	5	—	—	24

^a Exclusive of 12 patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

From this Table it appears that the cases admitted to hospital during the week ended December 30, and the cases under treatment at its close, respectively, were as follow:— Enteric fever 4 and 30; measles 3 and 6; scarlet fever 7 and 54 (exclusive of 12 convalescents at Beneavin, the Convalescent Home of Cork Street Hospital); and diphtheria 1 and 12. Seven cases of pneumonia were admitted during the week, and 24 remained under treatment at its close. Of the deaths in hospitals during the week 1 was from measles and 1 was from scarlet fever.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, December 30, in 96 large English towns (including London, in which the rate was 23.7), was equal to an average annual death-rate of 21.9 per 1,000 persons living. The average rate for 16 principal towns of Scotland was 19.2 per 1,000, the rate for Glasgow being 20.4, and that for Edinburgh 15.4.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell-Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended December 30. From this report it appears that of 47 cases notified 14 were of scarlet fever, 12 of diphtheria, 9 of pulmonary tuberculosis, 8 of other forms of tuberculosis, 2 of erysipelas, 1 of enteric fever, and 1 of cerebro-spinal fever. Among the 896 cases of infectious diseases in hospital at the close of the week were 140 of pulmonary tuberculosis, 121 of scarlet fever, 77 of diphtheria, 24 of measles, 4 of erysipelas, 3 of enteric fever, 3 of whooping-cough, and 2 of cerebro-spinal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of December, 1916.

Mean Height of Barometer,	- - -	29.600 inches.
Maximal Height of Barometer (4th, at 9 p.m.),	30.220	"
Minimal Height of Barometer (20th, at 9 p.m.),	28.845	"
Mean Dry-bulb Temperature,	- - -	38.0°.
Mean Wet-bulb Temperature,	- - -	36.9°.
Mean Dew-point Temperature,	- - -	35.6°.
Mean Elastic Force (Tension) of Aqueous Vapour,	.209	inch.
Mean Humidity,	- - -	92.0 per cent.
Highest Temperature in Shade (on 31st),	-	55.5°.
Lowest Temperature in Shade (on 27th),	-	26.4°.
Lowest Temperature on Grass (Radiation) (27th),	23.0°.	
Mean Amount of Cloud,	- - -	51.7 per cent.
Rainfall (on 24 days),	- - -	2.715 inches.
Greatest Daily Rainfall (on 12th),	- - -	0.487 inch.
General Directions of Wind,	- - -	W., S.W.

Remarks.

December 1916 proved to be a severe month—cold, damp, and wet. Had it not been for the sudden displacement of cold air by an unusually warm and humid Atlantic current on the 28th and a persistently high temperature thence-forward to the close of the year, the month would have been one of the coldest on record. The severe weather was of local rather than of Arctic origin—in fact, polar winds were practically absent throughout the month. A quiet state of the atmosphere at the beginning of the month, and a storm of hail, sleet and snow, thunder and lightning on the 12th, were the chief determining factors of a cold spell which lasted until the 28th.

The week ended the 9th was at first fine, bright and cold—afterwards dull and rainy. A large and deep atmospheric depression passed eastward south of Dublin on Saturday, the 9th. It was followed by another disturbance on the 12th, which covered the mountains and the inland counties of Ireland with a deep mantle of snow. Frost followed night after night, and even in the daytime the thermometer rose only slightly above freezing point. Rain fell in Dublin and the neighbouring districts on the early morning of Sunday, the 17th, but it turned into ice on the frozen ground, and the dangerous phenomenon known as a “glazed frost” developed. The whole surface of the Dublin streets was covered with a thick coating of transparent ice on which it was almost impossible to walk with safety. Some 300 accidents were treated in the Dublin hospitals in the course of that remarkable day, on which the thermometer did not rise higher than 28.9° in the City.

The cold spell culminated on the 27th, when temperature fell to 26.4° in the screen and to 23.0° on the ground in Fitzwilliam Square. A rapid rise of temperature took place in the night of that day, and the thermometer rose to 55.0° on the 28th and 29th, and to 55.5° on the 31st.

In Dublin the arithmetical mean temperature (38.8°) was much below the average (42.0°) ; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 38.0° . In the fifty years ending with 1915, December was coldest in 1878 (M.T. = 32.8°), and in 1874 (M.T. = 36.8°) ; warmest in 1898 (M.T. = 47.6°)

and in 1900 and 1905 (M.T. = 47.1°). In December 1915 the M.T. was 42.4°.

The mean height of the barometer was 29.600 inches, or 0.275 inch below the corrected average value for December—namely, 29.875 inches. The mercury rose to 30.220 inches at 9 p.m. of the 4th, and fell to 28.845 inches at 9 p.m. of the 20th. The observed range of atmospheric pressure was, therefore, 1.375 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 38.0°, or 7.6° below the value for November 1916. Using the formula *Mean Temp. = Min. + (Max. — Min.) × .52*, the value was 38.9°, or 3.2° below the average mean temperature for December, calculated in the same way, in the thirty-five years, 1871–1905, inclusive (42.1°). The arithmetical mean of the maximal and minimal readings was 38.8°, compared with a thirty-five years' average of 42.0°. On the 31st the thermometer in the screen rose to 55.5°—wind, W.S.W. ; on the 27th the temperature fell to 26.4°—wind, calm. The minimum on the grass was 23.0° on the 27th. Frost in the screen occurred on 13 nights, and 21 nights of frost on the grass were recorded.

The rainfall was 2.715 inches, distributed over 24 days. The average rainfall for December in the thirty-five years, 1871–1905, was 2.250 inches, and the average number of rain-days was 17. The rainfall, therefore, and the rain-days were considerably above the average. In 1876 the rainfall in December was very large—7.566 inches on 22 days. In 1868 (which was otherwise a fine and dry year), 4.749 inches fell on as many as 27 days. In 1911 also, 4.073 inches fell on 26 days in December. On the other hand, in 1867, only 0.771 inch was measured on 13 days ; in 1885, only 0.742 inch on 10 days ; in 1892, only 0.795 inch on 10 days ; and in 1871, only 0.797 inch on 15 days. In 1915, the rainfall was 4.877 inches, and the rain-days were as many as 25.

High winds were noted on 7 days, but never attained the force of a gale. The atmosphere was foggy in Dublin on the 2nd, 5th, 13th, 16th, 17th, 18th, and 27th. Snow or sleet fell on the 12th, 18th, and 23rd ; hail on the 9th, 10th, 12th, and 18th. Lunar halos were seen on the 1st, 4th, 7th, 8th, 10th, 29th, and 30th. There was a lunar corona on the 5th. Thunder and lightning occurred on the night of the 12th. There was a most unusual glazed frost throughout the 17th.

The rainfall in Dublin during 1916 amounted to 38.609 inches on 233 days, compared with 33.522 inches on 204 days in 1915, 26.518 inches on 198 days in 1914, 28.842 inches on 190 days in 1913, 27.649 inches on 208 days in 1912, 23.477 inches on 189 days in 1911, 35.439 inches on 219 days in 1910, only 16.601 inches on 160 days in 1887, and a thirty-five years' (1871–1905) average of 28.000 inches on 198 days.

Mr. T. Mulock-Bentley reports that at the Normal Climatological Station in Trinity College, Dublin, the mean height of the barometer was 29.63 inches, the range of atmospheric pressure being from 30.225 inches at 9 p.m. of the 4th to 28.903 inches at 9 p.m. of the 20th. The mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 39.2°. The arithmetical mean of the daily maximal and minimal temperatures was also 39.4°. The screened thermometers rose to 55° on the 28th, 29th, and 31st, and fell to 25° on the 27th. On the 27th the grass minimum was 15°. Rain fell on 24 days to the amount of 2.728 inches, the greatest fall in 24 hours being 0.442 inch on the 12th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 21.2 hours, of which 3.5 hours occurred on the 4th. The mean daily sunshine was 0.7 hour. The mean temperature of the soil at 9 a.m. at a depth of one foot was 41.0°; at a depth of 4 feet it was 45.8°.

Captain Edward Taylor, D.L., sends the following return of the rainfall at Ardgillan, Balbriggan, Co. Dublin, for December, 1916:—(Height above sea level, 210 feet.) The total rainfall was 3.01 inches, or 0.13 inch below the average of 23 years. On the 12th the rainfall measured 0.57 inch, being the most in one day. The rain-days were 25, or 5 above the average. From January 1st the rainfall measured 37.97 inches on 227 days, being 8.67 inches above the average, while the rain-days were 37 in excess of the average. The wettest December was that of 1914, 6.69 inches; the driest December was that of 1898, 1.41 inches. The wettest year (1893–1916) was 1916, with 37.97 inches; the driest year (1893–1916) was 1893, with 22.87 inches. The maximal temperature in the shade was 53.5° on the 31st; the minimal in the shade was 25.8° on the 19th.

Mr. J. Pilkington reports a rainfall of 4.15 inches on 24 days

at Stirling, Clonee, Co. Meath. The heaviest fall in 24 hours was 0.74 inch on the 12th. The precipitation on the 12th was mostly in the form of snow. The rainfall for the year 1916 at Stirling amounted to 45.38 inches on 237 days. This station stands 231 feet above sea level.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 2.45 inches on 20 days. The greatest fall in 24 hours was 0.555 inch on the 12th. The total rainfall for the year was 34.255 inches on 220 days. The heaviest fall in 24 hours during the year was 2.295 inches on May 5th.

The rainfall at the Ordnance Survey Office, Phoenix Park, Dublin, was 3.04 inches on 24 days, the maximum in 24 hours being 0.665 inch on the 12th. The total amount of sunshine was 52.0 hours, the largest daily amount being 6.2 hours on the 4th and the 22nd.

At Cheeverstown Convalescent Home, Clondalkin, Co. Dublin, Miss Mary Love reports that the rainfall was 3.01 inches on 23 days. The maximal fall in 24 hours was 0.52 inch on the 13th.

Mr. Harold Fayle forwards the following weather report for December 1916, from Sandford Lodge, Ranelagh, Dublin :—

Mean Height of Barometer,	-	-	29.61 inches.
Highest Corrected Reading (4th, 21 hours),	-	30.22	„
Lowest Corrected Reading (20th, 21 hours),	-	28.86	„
Mean Dry-bulb Temperature,	-	-	38.4°.
Mean Wet-bulb Temperature,	-	-	38.0°.
Mean Maximal Temperature,	-	-	43.5°.
Mean Minimal Temperature,	-	-	34.4°.
Arithmetical Mean Temperature,	-	-	39.0°.
Highest Temperature in Screen (28th, 31st),	-	56°.	
Lowest Temperature in Screen (27th),	-	23°.	
Lowest Temperature on Grass (27th),	-	11°.	
Nights of Ground Frost,	-	-	21.
Rainfall (on 24 days),	-	-	2.77 inches.
Greatest Daily Rainfall (12th),	-	-	0.59 inch
Mean Amount of Cloud,	-	-	63 per cent.
Days of Clear Sky,	-	-	4.
Days of Overcast Sky,	-	-	11.
General Directions of Wind,	-	-	From South to West.

The maximal temperature was below 40° on six days ; on the

17th the thermometer remained below freezing all day ; on the 27th the dry bulb temperature at 9 a.m. was 24° , on the 28th it was 51.8° , a rise of nearly 28° in 24 hours.

Mr. F. Dudley Joynt registered 2.745 inches of rain on 21 days at 89 Anglesea Road, Donnybrook, Dublin, the largest measurement in 24 hours being 0.650 inch on the 12th. The rainfall in 1916 at this station amounted to 36.420 inches on 217 days. The thermometer rose to 56° on the 28th and 31st, having fallen to 25.5° on the 26th.

Dr. Arthur S. Goff reports that at Belfort House, Dundrum, Co. Dublin, rain fell on 22 days to the amount of 3.08 inches—0.62 inch being measured on the 12th. Temperature ranged from 55° on the 28th and 31st to 26° on the 18th. The mean shade temperature was 39.0° Fahrenheit. Snow fell heavily on the 11th and 12th.

Mr. W. J. McCabe, the observer for the Right Hon. Laurence Waldron, D.L., at Marino, Killiney, Co. Dublin, returns a rainfall of 3.14 inches on 18 days, the heaviest fall in 24 hours being 1.19 inches on the 12th.

The average rainfall in December at Cloneevin, Killiney, for the 24 years (1885–1908) was 2.342 inches on 17.6 days.

Dr. J. H. M. Armstrong, M.B., reports that at Coolagad, Greystones, Co. Wicklow, the rainfall in December was 4.15 inches on 23 days. Of the total amount 1.49 inches fell on the 12th, accompanied by thunder and lightning. From January 1st to December 31st, 1916, rain fell at Coolagad on 231 days to the total amount of 47.03 inches.

Mrs. Sydney O'Sullivan returns the rainfall at Auburn, Greystones, as 3.36 inches on 22 days, the heaviest fall in 24 hours being 1.03 inches on the 12th.

Dr. F. O'B. Kennedy reports a rainfall of 3.28 inches on 21 days at the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, the maximal fall in one day being 1.35 inches on the 12th. The mean temperature of the month was 40.0° (mean max., 44.9° , mean min., 35.0°) and the extremes were—highest, 55° on the 28th and 31st ; lowest, 28° on the 18th and 19th.

The Rev. Canon Arthur Wilson reports that rain fell on 19 days at the Rectory, Dunmanway, Co. Cork, to the amount of 4.79 inches, or considerably less than the average. The heaviest falls were 1.08 inches on the 28th, 0.58 inch on the

19th and 0.54 inch on the 8th. No rain fell from the 12th to the 17th inclusive. There was a slight fall of snow on the 15th, which did not completely disappear until the 28th. Rain fell daily from the 18th to the 24th, and as it froze each night the roads became sheeted with ice. Skating was possible on 6 days. The frost-spell was the severest for many, probably for 22, years. Christmas Day and St. Stephen's Day were very fine and sunny, with frost at night. The total rainfall for 1916 at Dunmanway was 66.86 inches on 239 days.

RAINFALL IN 1916.

At 40 Fitzwilliam Square, West, Dublin.

Rain Gauge :—Diameter of Funnel, 8 in. Height of top—Above ground, 1 ft. 4 in. ; above sea level, 54 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which .01 or more was recorded
		Inches	Inches	
January,	1.398	0.264	21st	16
February,	3.559	0.448	29th	26
March,	3.404	0.696	19th	24
April,	1.653	0.348	19th	18
May,	4.634	1.816	5th	21
June,	2.363	0.626	30th	18
July,	2.139	0.425	1st	13
August,	2.881	0.596	27th	16
September,	2.141	0.583	2nd	14
October,	5.951	0.793	2nd	24
November,	5.771	1.564	17th	19
December,	2.715	0.487	12th	24
Total	38.609	1.816	May 5th	233

The rainfall was 38.609 inches, or as much as 10.609 inches over the average annual measurement of the thirty-five years, 1871–1905, inclusive—viz., 28.000 inches.

It is to be remembered that the rainfall in 1887 was very exceptionally small—16.601 inches. In 1870 only 20.859 inches fell ; in 1884 the measurement was 20.467 inches ; in 1883 it was 20.493 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32.966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. In 1900 the rainfall was 34.338 inches, or 6.338 inches in excess of the average for the thirty-five years, 1871–1905. In 1910, also, the rainfall was very large, 35.439 inches on 219 days. Only once since these records commenced has the rainfall in Dublin exceeded that of 1910—namely, in 1872, when 35.566 inches fell on 238 days. In 1880 34.512 inches were measured on, however, only 188 days. In 1915 33.522 inches of rain fell on 204 days. The past year, 1916, established a notable record for rainfall in Dublin.

In 1916 there were 233 “rain-days,” or days upon which not less than .005 inch of rain (five-thousandths of an inch) was measured. This was 35 days in excess of the average number of rain-days in the thirty-five years, 1871–1905, inclusive. In 1868 and 1887—the warm, dry years of recent times—the rain-days were only 160, and in 1870 they were only 145.

On two occasions in 1916 one inch of rain or upwards fell on a given day in Dublin—viz., May 5th, 1.816 inches, and November 17th, 1.564 inches. In 1901, the rainfall only once exceeded one inch, but on that occasion (November 11th) the measurement was 2.037 inches. In 1902, 1.342 inches fell on July 25th, and 2.075 inches on September 2nd. An excessive rainfall on August 25th, 1905, is especially noteworthy—it amounted to 3.436 inches in Dublin (Fitzwilliam Square). On no other occasion within the previous 47 years had 3 inches or upwards been measured. It was the ninth occasion only since 1865—that is, in 47 years inclusive—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the preceding 24 hours’ precipitation. The previous excessive falls were—August 13th, 1874 (2.482 inches); October 27th, 1880 (2.736 inches); May 28th, 1892 (2.056 inches); July 24th, 1896 (2.020 inches); August 5th, 1899 (2.227 inches); August 2nd, 1900 (2.135 inches); November 11th, 1910 (2.037 inches); and September 2nd, 1902 (2.075 inches).

The rainfall in the first six months of 1916 was 17.011 inches on 123 days. In the second six months it was 21.598 inches on 110 days.

The rainfall was distributed quarterly as follows:—8.361

Abstract of Meteorological Observations taken at Dublin (40 Fuzhillium Square, West) during the Year 1916.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rain Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds	
January	o	2nd	o	20th	52.1	43.3	"	16	30.018	30.512	9th	"	28.865	1st	S.W., W., S., S., N.E., N.E.
February	-	53.9	16th	31.0	28th	45.5	36.0	26	29.750	30.409	23rd	28.660	3rd	W., S.W., N.E., E.	
March	-	57.2	31st	27.3	4th	44.0	35.6	3,404	24	29.745	30.356	31st	29.193	25th	W., N.W., S.W., W., N.E., E.
April	-	63.3	26th	31.9	6th	53.8	41.2	1,653	18	29.893	30.366	1st	29.265	19th	W., N.W., S.W., W., N.E.
May	-	71.5	19th	37.0	8th	57.8	46.3	4,634	21	29.903	30.387	18th	29.302	6th	W., N.E.
June	-	69.0	17th	40.0	8th	60.1	48.0	2,363	18	29.943	30.341	16th	29.253	4th	N.W., N.E., N.W., N.W., N.E., E.
July	-	75.6	23rd	47.0	8th & 9th	65.9	54.4	2,139	13	30.045	30.417	29th	29.551	7th	W., N.W., S.W., N.W., S.W., N.W.
August	-	74.0	4th & 12th	47.3	30th	68.2	56.3	2,881	16	29.910	30.433	3rd	29.360	25th	W., N.W., S.W., N.W., S.W., N.W.
September	-	68.2	7th	43.1	20th	62.0	51.6	2,141	14	30.069	30.431	9th	29.629	27th	W., N.W.
October	-	69.0	6th	40.3	16th & 30th	57.5	48.2	5,951	24	29.693	30.250	19th	28.591	30th	W., S.W., S.E.
November	-	60.0	10th	33.1	27th	50.4	42.6	5,771	19	29.631	30.342	13th	28.502	5th	W., S.W., S.
December	-	55.5	31st	26.4	27th	42.5	35.0	2,715	24	29.600	30.220	4th	28.345	20th	W., S.W.
Extremes, Totals, and Means	$\frac{o}{5}$		75.6	July 23rd	26.4	Dec. 27th	$\frac{5.0}{50.0}$	$\frac{o}{5}$	$\frac{"}{38,609}$	$\frac{44.9}{233}$	$\frac{"}{29,853}$	$\frac{30.512}{Jan. 9th}$	$"$	$\frac{28.502}{Nov. 5th}$	$\frac{W., S.W.}{N.W., N.E.}$

JOHN WILLIAM MOORE, M.A., M.D., D.P.H., Dubl.; D.Sc., Oxon.; F.R.C.P.I.
F. R. Met. Soc.

January 4, 1917.

inches fell on 66 days in the first quarter, 8.650 inches on 57 days in the second, 7.161 inches on 43 days in the third, 14.437 inches on 67 days in the fourth quarter.

Included in the 233 rain-days in 1916 are 28 on which snow or sleet fell, and 47 on which there was hail. In January hail was observed on 2 days, in February on 11 days, in March on 15 days, in April on 5 days, in May on 2 days, in June on 4 days, in August on 1 day, in October on 1 day, in November on 2 days, and in December on 4 days. Snow or sleet fell on 1 day in January, 11 days in February, 11 days in March, 2 days in November, and 3 days in December. Thunderstorms occurred on 1 day in January, 1 day in June, 4 days in August, and 1 day in December. Thunder was heard without visible lightning once in April, June, July, and October. Sheet lightning was seen once in January, August, September and October.

More or less fog prevailed on 23 occasions—1 in January, 1 in February, 3 in March, 1 in April, 1 in May, 1 in July, 2 in August, 4 in September, 1 in October and November, and 7 in December. High winds amounted to gales (force 8 or upwards, according to the Beaufort scale) on 22 occasions—2 in January, 3 in February, 3 in April, 8 in October, and 6 in November.

Solar halos were seen on 13 days, a lunar halo on 20 nights, a lunar corona on 6 nights. Aurora borealis was seen on the evenings of August 26th and of September 1st, 3rd and 28th.

One of the most remarkable phenomena of the year in Dublin was a “glazed frost” on Sunday, December 17th. Showers of rain fell in the early morning hours and froze on touching the ground. The highest temperature during the day was 28.9°.

THE HARVEIAN ORATION OF A.D. 1661.

AMONG the many bibliographical treasures constituting the “Cashel Loan” in Marsh’s Library, St. Patrick’s Close, Dublin, is a pamphlet, unfortunately incomplete, consisting of a preface and 20 pages, of which the title page bears the following inscription :

“*Oratio habita in ædibus Collegii Medicorum Londinen-sium, 25 Jul. 1661. Die HARVÆI memoriæ dicato, ab Edouardo Greaves Baronetto, ejusdem Collegii Socio, et Medico Regis Ordinario. Londini: 1667.*”

PERISCOPE.

HYDROCYANIC ACID AS AN INSECTICIDAL FUMIGANT.

DR. C. E. CORLETTE in the *Medical Journal of Australia*, November, 1916, discusses the methods of fumigating ships, mills, houses, &c., so as to get rid of insects, their larvæ and eggs, and points out that although hydrocyanic acid is the most efficacious substance, its use is practically unknown outside California, Florida, South Africa and Australia. He gives the following abridged description of the eradication of the *Ephestis* flour moth from a mill of four floors, each measuring 12,000 cubic feet, giving a total measurement of 48,000 feet :—" Bagging was plugged into roof crevices, windows and cracks were pasted up, and all shoots and elevators opened up, to allow free entrance of the vapour. As each floor was treated separately, belt holes and ladder openings were closed with bags, the latter being arranged so that the operator could slip through quickly after setting things going on one floor and then drag the bags over the opening. Kerosene tins coated inside with tar were used as generators, three on each floor, and into each was placed, first, 192 ounces of water, and then 96 fluid ounces of commercial sulphuric acid were gently poured into the water. Two paper bags, each containing 2 lbs. of broken potassium cyanide, were placed on the floor beside each generator. The charging with water and acid was started on the top floor, and the operator worked down to the bottom. Then he mounted once more to the top floor, and starting from the tin furthest from the trap-door, he dropped the bags into their respective tins. As each floor was dealt with he descended to the story next below, closing the trap-door behind him as he went down the ladder. In this way fumigation was set going on all four floors. Viewed through the windows of the ground floor, it was noticed that the moment the liquid soaked the paper of the bag, generation of the vapour commenced, the contents soon boiling up madly to the rim, so that the tins were charged to their utmost capacity. The room was soon filled with a fine blue haze. The mill was closed up about four o'clock one afternoon, and when opened up next morning it was found that, with the exception of a very faint trace of a smell of the vapour on the ground floor, all of it had

worked out during the night. Swarms of dead blow-flies were lying around the windows, and the floors were spotted with hundreds of dead moths. Minute inspection of infested flour in the elevators and shoots proved that every caterpillar and moth was dead. . . . The cost of materials used for treating this mill was less than £4, with cyanide at 10d. per lb. and sulphuric acid at $1\frac{1}{2}$ d. per lb." It is difficult and dangerous to fumigate ships in this way, as the gas, being light, rises.

A STUDY IN HEREDITY.

DR. H. DRINKWATER in the *Liverpool Medico-Chirurgical Journal*, Vol. 36, 1916, publishes an interesting chart of the immediate ancestors and descendants of the Chamberlens, the originators of the midwifery forceps. It is compiled partly from J. H. Aveling's book, and partly from a paper by K. R. Drinkwater. The family takes its descent from William Chamberlen, a Huguenot, who died in England in 1596. The direct male descent ended with Dr. Hugh Chamberlen in 1728, but was carried on in the female line through the Walker family and subsequently the Carmichael family. Both of these branches were connected with Ireland; Elizabeth Chamberlen married Lieut.-Colonel William Walker, an officer in the Army in Ireland, and for at least five generations Chamberlen occurs amongst her descendants as a Christian name. Elizabeth Walker married James Carmichael, and amongst her children were Canon and Bishop Carmichael. The large number of the Chamberlen descendants who won distinction in their respective professions is an interesting study in heredity, and supports the view that intellectual powers are inherited chiefly from the mother.

PEMPHIGUS NEONATORUM.

IN the *American Journal of Obstetrics* for December, 1916 - subject from the Department of Experimental Medicine (page 1048), will be found an instructive paper on this and of Obstetrics, University of Illinois College of Medicine, Chicago, by Frederick Howard Falls, M.S., M.D. It appears that within the past year eight or nine "epidemics" of the disease have occurred in the maternity

departments of several hospitals. Dr. Falls had the opportunity to study several of these outbreaks.

The epidemic at the University Hospital, consisting of six cases, was most carefully observed. No source of infection could be traced. The mothers were all normal on admission to the hospital. No history of previous attendance by midwives was obtained. No cases of impetigo had been recently treated at the hospital. The lesions were perfectly typical.

Dr. Falls finally arrives at the following conclusions.

(1) The disease is an epidemic staphylococccic vesicular dermatitis occurring in new-born babies as a rule, but capable of being transmitted to older children and adults.

(2) The causative organism is a peculiar strain of *Staphylococcus aureus*, which has fulfilled all of Koch's laws with respect to this disease.

(3) The disease usually runs a benign course, but may be fatal. The cause of death in the fatal cases is usually a septicæmia, initiated by invasion of the umbilical vessels in most of the cases.

(4) The possible origin of an epidemic from impetiginous lesions on other children and adults renders it imperative that all babies be protected from such sources of contamination.

(5) In the presence of an epidemic, prompt isolation of all cases with special equipment and attendants, together with thorough sterilisation of rooms and equipment subsequently is the only efficient means of eradicating the disease.

(6) The disease should be made reportable (that is, notifiable) by law.

(7) Early rupture of the lesions and the application of separate dressings of 2 per cent. white precipitate ointment to the lesions will control most cases.

(8) In the presence of an epidemic the possible rôle of midwives and other attendants as carriers of the contagion should be kept in mind, and proper measures initiated to stop the spread through these agencies.

Dr. Falls states that details of the bacteriology and epidemiology of the disease will be published soon in a separate report.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

MODERN PHARMACEUTICAL PRODUCTS.

THE Saccharin Corporation, Ltd., 36-37 Queen Street, London, E.C., have recently submitted to us several of their novel and very elegant preparations. A brief description of some of these will interest our readers.

Dial plays the part of an non-irritant hypnotic and sedative in simple insomnia from overwork or in advanced age, in dipsomania, morphinism, and dementia. Its strict chemical name is Diallylbarbituric acid or Diallyl-manolyl-urea. Chemically it is closely related to diethyl-barbituric acid (the "Barbitonum" of the British Pharmacopœia, 1914) and other derivatives of barbituric acid. A small to a moderate or full dose—one to three $1\frac{1}{2}$ grain tablets in a glass of hot milk or in hot whisky and water—will induce a deep refreshing sleep in an hour's time or thereabouts, and will not be followed by any unpleasant after effects. The smallest dose ($1\frac{1}{2}$ grains) should first be tried in a given case. It is not cumulative and cannot be recovered from the urine—facts from which the conclusion may be drawn that dial is broken up into simpler compounds by the internal organs. Its colourless crystals, faintly bitter in taste, without smell, are sparingly soluble in cold water, but freely soluble in warm water or milk, alcohol and ether.

Trivalin is described as "the substitute for morphine," which, however, is present in the preparation. It is a combination of caffeine valerianate, cocaine valerianate, and morphine valerianate in molecular proportion, the undesirable properties of one drug being counteracted by the others, while it is claimed that the beneficial properties of all three drugs are intensified. One c.c. of trivalin contains one-seventeenth of a grain of caffeine valerianate, one-twelfth of a grain of cocaine valerianate, and three-tenths of a grain of morphine valerianate. The dose is one-half to one c.c. once to thrice daily. It is dispensed in the form of tablets

or capsules for internal administration—each tablet or capsule representing half a cubic centimetre of trivalin solution; or in the form of one c.c. ampoules for hypodermic injection.

Lipoiodine is an organic iodine fatty-acid compound, especially recommended for the internal treatment of syphilis. It is emulsified in the intestines, absorbed by the lymphatics and so passed on to the fat-requiring tissues, such as the brain, spinal cord, and fatty tissues. It is supplied in tablets, each of which contains five grains of lipoiodine. The dose is one to three tablets daily after meals. The tablets should be thoroughly masticated.

Phytin is a “ vegetable phosphate brain and nerve food.” It was introduced by Dr. Gilbert, Professor of Therapeutics in the University of Paris. The preparation is in the form of a white powder, tasteless and odourless. It is actually the phosphorus-reserve substance formed in plants by Nature—a storage containing the essentials for the making and support of life in the plant embryo. Chemically, it is a calcium-magnesium salt of the anhydro-oxymethylin-diphosphoric acid, and contains about 22 per cent. of phosphorus. Phytin, being absolutely assimilable, is easily and rapidly absorbed by the system, nourishing the cells and tissues and generally improving the condition of the blood. It is an organic compound of phosphorus, which finds its sphere of usefulness in conditions associated with an excessive loss of phosphorus from the body, in conditions attended with general lowering of energy or retardation of the ordinary process of nutrition, and in conditions in which assimilation of phosphorus with the ordinary food is defective, for example, in rickets.

A diluted form of phytin suitable for infants and children under two years old has received the name of “ Fortossan ” (that is, the “ bone-strengthener ”). It is merely phytin with sugar of milk.

The dose for adults is 8 grains twice daily, for children, 4 to 8 grains once or twice daily immediately before meals. It may be dispensed as a powder in a granular form, or in cachets of 8 grains and capsules of 4 grains.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 1, 1917.

PART I.

ORIGINAL COMMUNICATIONS.

ART. X.—*Fractures and Fracture Dislocations.*^a By JOHN S. McARDLE, M.Ch. (*Hon. Causâ*) R.U.I., F.R.U.I., F.R.C.S.I.; Professor of Surgery, National University of Ireland; Senior Surgeon, St. Vincent's Hospital; Consulting Surgeon, National Hospital, Holles Street, and Children's Hospital, Temple Street, Dublin. (Illustrated.)

DISLOCATION OF THE SHOULDER JOINT.

I HAVE shown you here during the session so many cases of fracture of the upper extremity requiring vigorous operative measures for their relief that I hope I have convinced you of the urgent necessity for early and accurate diagnosis in such cases.

To-day I wish to show you that dislocations of the upper end of the humerus are occasionally overlooked, and lead to such miserable consequences that both patient and attendant suffer—the one from pain and much inconvenience, the other from loss of repute.

I shall place before you the *x-ray* pictures of the cases now under my care showing most of the dislocations to which the shoulder is liable.

They are all ancient, showing that there was some want of judgment in the early days of their treatment. This

* Continued from Vol. CXLIII., No. 541, January, 1917, page 4.

may have arisen from faulty diagnosis, or from want of manipulative skill, or from the fact that in the first instance the patient did not consult a doctor at all. From whatever cause failure has occurred, something was wrong in the mental attitude of those who first saw these cases.

My object in bringing them before you is to stimulate

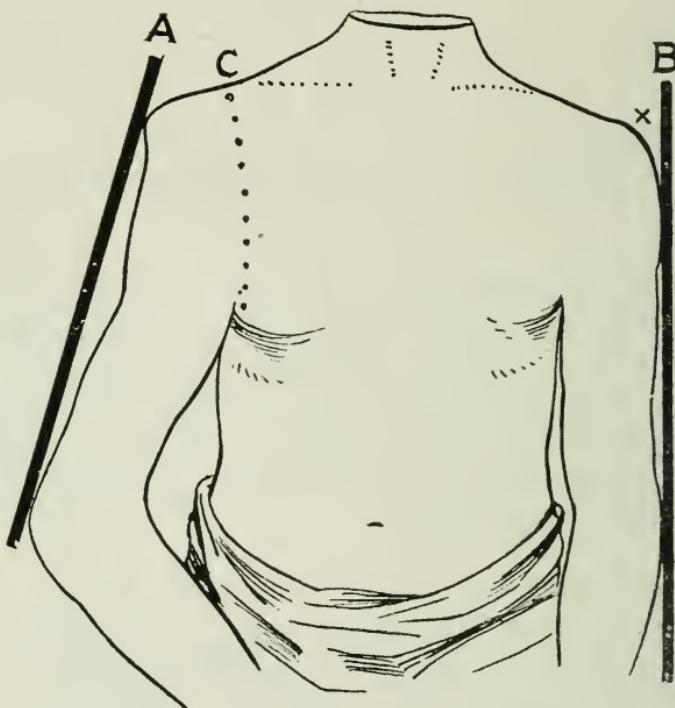


FIG. 7.

- A. Straight edge on injured side.
- B. Straight edge on sound side.
- X. The tip of the acromion process.
- C. Circumferential measurement of axilla.

you to apply your talents to a careful investigation of all the cases coming under your observation while we work together here.

There is only one way to be happy in dealing with material injuries of the body, and that is to be able to make an accurate diagnosis. This done, anyone can treat the case properly.

Before presenting these cases and their *x-ray* plates, let me tell you the points of differential diagnosis between

DISLOCATIONS OF THE SHOULDER.

MR. JOHN S. MCARDLE—*Fractures and Fracture Dislocations.*

PLATE V.

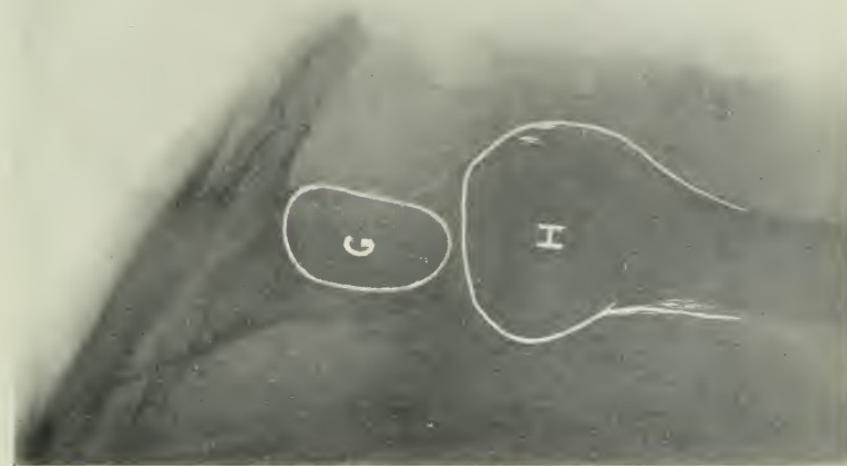


FIG. 9. Sub-glenoid.



FIG. 10. Sub-coracoid.

fracture of the upper end of the humerus and dislocation of that bone.

It may be said—“*Why labour this point; everyone knows all about it?*” The plates I show you are a substantial contradiction to this assertion, and the patients before you to-day are living witnesses against any such view of the surgical situation.

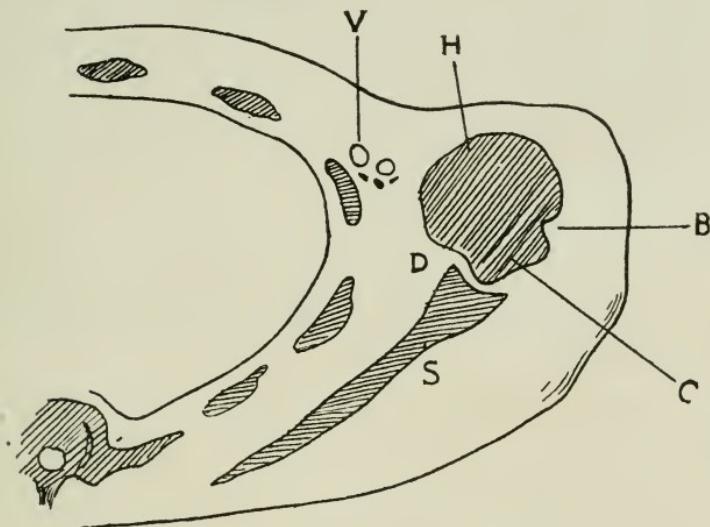


FIG. 8.

- V. Axillary vessels.
- H. Humeral head.
- B. Bicipital groove. C. Tuberosity of humerus.
- S. Scapula.

If the study of differentiation of shoulder-joint injuries had reached finality, would you find four cases of ancient dislocation at one time in hospital? Let these cases be a warning to you not to look lightly on any injury of the shoulder however slight it may appear at first.

The great swelling which early supervenes sometimes makes for difficulty of diagnosis, but very little care will suffice to eliminate the causes of diagnostic error.

The attitude of the patient who has sustained an injury to the shoulder often suffices to make the diagnosis.

At Punchestown Races, on April 19th, I was standing with a group of friends—some sporting, some surgical—when Mr. S., riding a great grey horse, came to grief at a

drop fence, and after many gurations, fortunately free of his horse, the rider got up with the help of some of the onlookers. With my glasses on him I said to those around me, "He has dislocated his shoulder!" St. Thomas was in the ascendant that day: even the ladies were disbelieving or very doubtful as to the possibility of making out the result of a fall at such long range. The coterie round followed me to the ambulance room, when the rider arrived supporting his forearm in front of his chest with his elbow well out from his side.

It was this position of his arm, seen at a distance of three fields away, which convinced me that dislocation had occurred and not fracture.

Now, in fracture of the humerus the elbow is not pointed outwards. Do keep this in mind, as it may prevent your making a pump-handle of your patient's arm in vain efforts at diagnosis.

This case, which was one of sub-glenoid dislocation, yielded at once to Kocher's treatment by manipulation, and to the astonishment of my friends, the patient walked out to the saddling paddock within a few minutes.

Learn this method for your own sakes as well as for the benefit of those who entrust themselves to your care.

When I have dealt with the points of diagnosis I shall demonstrate to you all the ways of reducing dislocation of the shoulder.

Now let me give you an idea of how you examine cases of injury of the shoulder. Place the patient in the sitting posture, and, viewing him from the front, observe the folds of the axilla. In fracture they are at the same level, on the side of a dislocation the pectoral fold is lowered by 1 to 2 inches, as shown in E, Fig. 15, Plate VII. Now look at a shoulder in fracture, it is rounded B, in dislocation it is angular A, Fig. 7. Now measure the length of the arm. In dislocation there is, as a rule, lengthening; in fracture there is shortening. Next pass a tape, as I show you, round the axilla from the acromio-clavicular joint X, Fig. 7, and you will find that in fracture the two sides correspond in circumference, while in dislocation the affected side

PLATE VI.

DISLOCATIONS OF THE SHOULDER.



Fig. 11. Sub-clavicular.

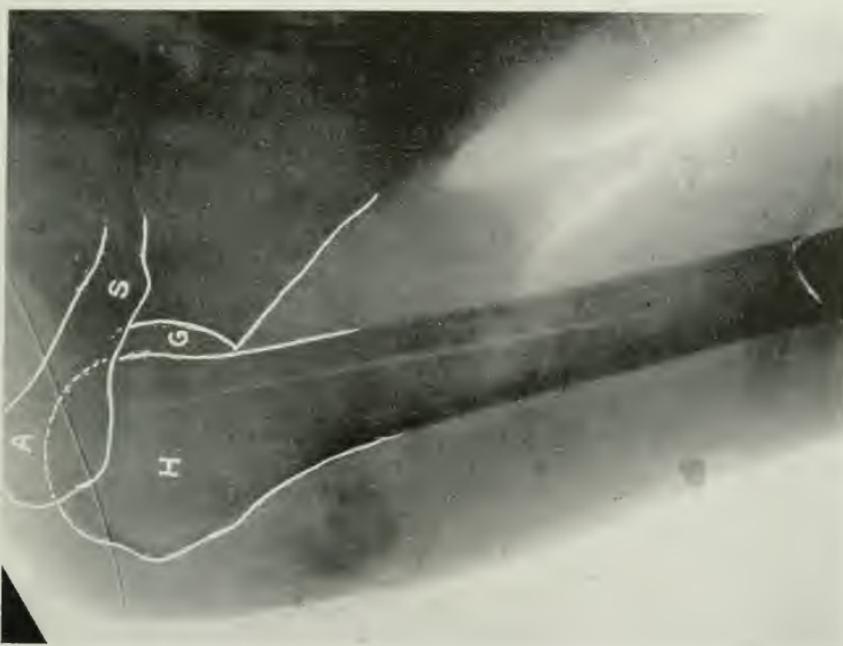


Fig. 12 Sub-acromial.

measures $1\frac{1}{2}$ to 2 inches more than on the sound side. When you place a straight edge along the outer side of the arm, which is kept as close as possible to the side, in dislocation the acromion and outer condyle of the humerus support the ruler, while in fracture the head of the humerus prevents the ruler B, Fig. 7, striking these points, keeping it $\frac{1}{2}$ to 1 inch from the acromion, marked X in figure.

These tests for differential diagnosis are spoken of as Frank Hamilton's, and they are well worthy of your most serious consideration.

Now, the attitude of the limb is important, and you may take it that the higher the head of the humerus reaches the more the elbow is removed from the side, and the more it points backwards.

The only dislocation in which the arm lies along the chest is where the head of the humerus is displaced upwards.

Let me show you the *x-ray* photographs of the cases now under our observation; they cover the whole field of ordinary dislocation. Fig. 9, Plate V., shows the sub-glenoid type. This, I may tell you, is the usual position of the bones at first in all the internal displacements of the humerus.

To make the Plates more useful to those who study these pages I have outlined the shadows of the bones and lettered them.

In all the Plates the glenoid is marked G, the humeral head H, the coracoid process C, clavicle *a*, the acromion A, and the spine of the scapula S.

Sub-glenoid dislocation is not quite an accurate description, because the scapular head of the triceps is very strong, and prevents the head of the humerus from going directly downwards.

Usually the perforation in the capsule of the shoulder-joint is torn through between the sub-scapularis and the long tendon of the triceps; the groove between the head and greater tuberosity comes to lie on the edge of the glenoid, as shown (Fig. 8). The normal position being as depicted in Fig. 13, which shows the bicipital groove

well in front, while in dislocation this groove points outwards.

Fig. 9, Plate V., is an admirable photograph of the sub-glenoid type. How this position of the bone was maintained is easily explained. It was owing to a direct fall on the shoulder in a patient of weak muscle fibre. The arm was fixed to the side just after injury, and kept there for many weeks. Had the accident occurred to a strong man the head of the humerus would soon have

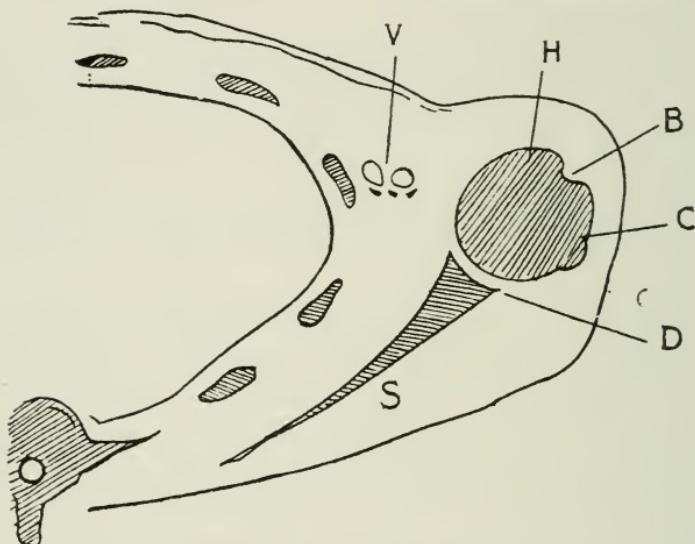


FIG. 13.

- V. Axillary vessels.
- H. Humeral head.
- B. Bicipital groove.
- C. Greater tubercle.
- S. Scapula.

found its way to the sub-coracoid region, impelled thereto by the contraction of the shoulder muscles. The next picture to which I desire to direct your attention is one of the sub-coracoid kind. You will see that the head of the humerus, H, Fig. 10, has passed well up, internal to the glenoid head, and rests just below the coracoid process of the scapula.

In this, as in the next case, I have no doubt the original condition was one of sub-glenoid type, but time and muscular action brought about the abnormal condition shown here.

Frequently, especially after vain attempts at reduction,

the head of the bone is drawn still further upwards, bringing about the sub-clavicular form of displacement (Fig. 11). Fig. 12 shows a most unusual condition. You will see

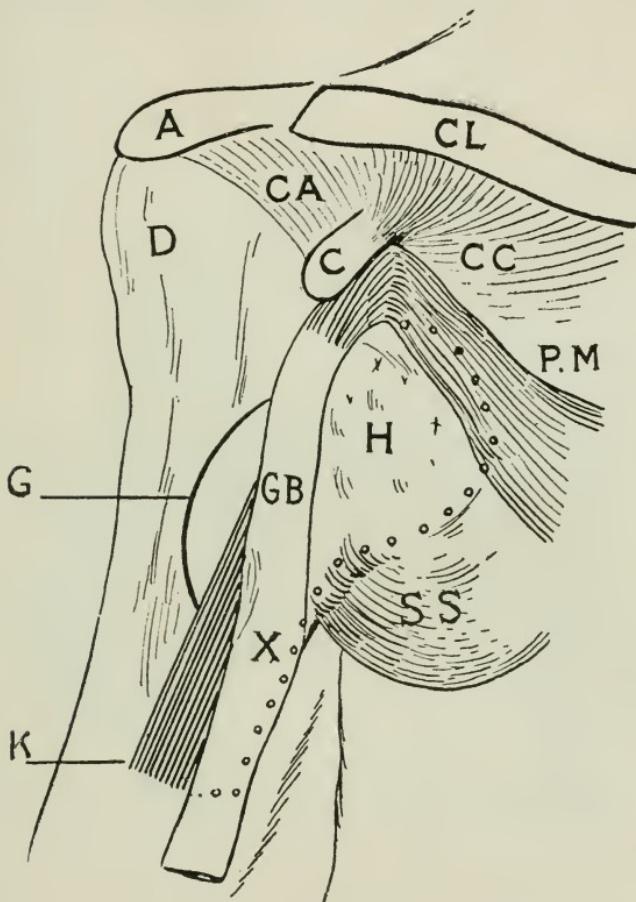


FIG. 14.

K. Shaft of humerus.

H. Head of humerus.

C. Coracoid process. G. Glenoid.

D. Deltoid muscle.

X. Long tendon of triceps origin at lower angle of
glenoid. A. Acromion. CL. Clavicle. CA. Aero-
mio-clavicular ligament. CC. Coraco-clavicular
ligament. CB. Coraco-brachialis and biceps.
PM. Pectoralis minor. SS. Sub-scapularis.

that the humeral head has passed upwards, so as to press against the coraco-acromial ligament.

This is only a sub-luxation, as you will see that the head of the humerus still occupies the upper third of the glenoid cavity, as shown in this Figure; the arm lies along

the chest, while in all the other dislocations the elbow points outwards.

That you may understand the principle underlying the procedure for reduction of the dislocation of the shoulder I show you now (Fig 14) the relations of the displaced head of the humerus. The lettering makes clear the situation of the different structures involved; while Figs. 7 and 15 show the relation of the bones on the sound and injured sides.

ART. XI.—*A Theory of the Body Temperature.* By J. M. O'CONNOR, M.D.; Assistant in Physiology, Univ. Coll., Dublin.

THE body temperature—a matter of weighty practical moment—has as a branch of physiology been singularly free from speculation. Its remarkable constancy was noticed early; it is even stated that it was used by Fahrenheit as one of the first fixed points on his thermometer, to be soon discarded in favour of the temperature of boiling water. It has been long ago shown that the boiling point of water is in no sense an absolute, but the body temperature still remains as something intrinsically determined for the healthy organism. Fever, it is true, shows us every day that it is capable of alteration; but by a natural prejudice the pathological is seldom regarded as other than a disturber of order, and the increase of temperature in fever as something added on to the normal. As a result we have, in spite of the admirable pioneer work of Liebermeister, no attempt—so far as I know—at a theory of the body temperature beyond the view that it is an evolutionary remnant.

During experiments on the question of the regulation of temperature I have met facts which have induced me to consider whether all maintained body temperatures classed as normal or abnormal by applied physiology cannot be explained on the same grounds. The very fact that speculation on the subject has been so rare has driven these theorisings perhaps too far beyond the bounds of

PLATE VII.

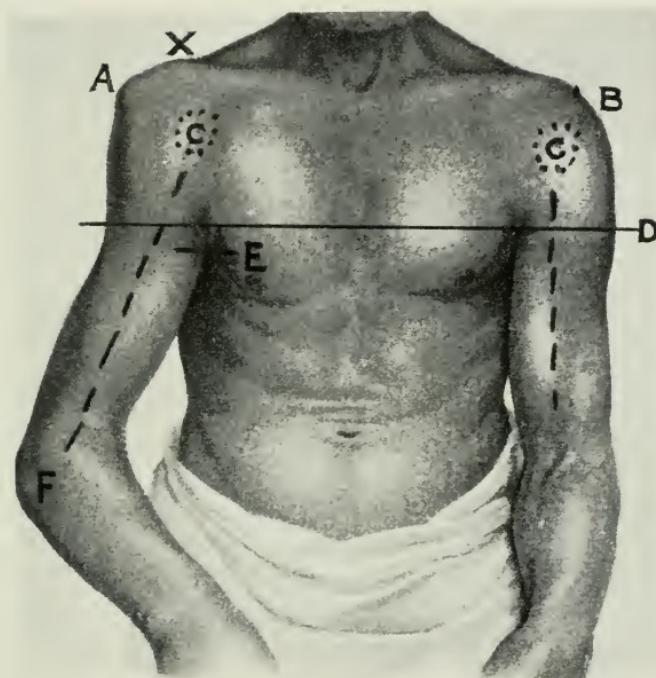


FIG. 15.

- A. Point of acromion.
- X. Acromio-clavicular joint.
- B. Rounded shoulder on sound side.
- D. Line showing the lowering of axillary fold at E. The end of this line showing depression of deltoid.

ascertained fact. It has, however, been pointed out to me that, correct or not, they have the merit of endeavouring to remove the body temperature from the axiomatic; and that, as the experimental proof requires much time and meets many difficulties, a sketch of a possible solution is justifiable.

That the temperature of an animal is at all above the average of the moist external air is a natural result of the conversion of chemical energy into motion. Some classes of animal life have, in addition, the power of keeping their deep temperature fixed in spite of variations in the outside conditions. It is easy to find advantages in this, but such teleological matters do not concern us; the point we have to deal with is why this temperature is a particular one.

It is well known that the body temperature is maintained by two mechanisms: on the one side by increasing the production of heat; on the other by availing of mechanisms to facilitate its dissipation. The first, called by Rubner¹ the chemical heat regulation, is easily investigated. If we expose a fasting animal to various air temperatures we find that the heat production, fairly measured by the oxygen consumption, falls gradually with rising air temperature until it reaches a minimum at about 25° C. Below this minimum—called the basal metabolism—it cannot be brought. Further increase in the air temperature produces—speaking generally—no alteration in the metabolism until the mechanism of cooling reaches the limit of its efficiency. When we turn to this other, or cooling mechanism—“the physical heat regulation”—we are not so satisfactorily placed. So far as I know, the only attempt which has been made to express the *mechanism* of heat loss in figures has been Rubner's determinations of the water loss by evaporation. This in the dog is at its minimum at about 15° C., but alters rapidly only during the period of air temperature in which the basal metabolism is stationary. The results, however, are for this purpose clearly unsatisfactory. A large portion of the loss comes from the lungs, and is, con-

sequently, mainly at the mercy of the respiratory needs, and of that which is lost from the skin a considerable portion is due to a passive drying, occurring in the dead as in the living, influenced largely by the temperature of the skin itself,² and in no sense to be considered as representing a biological activity. It is fairly certain, however, that there is a point of outside temperature at which the animal is at its minimum heat production, and at which there is no active effort made to accelerate heat loss : at which, in short, the passive heat production of the animal is in balance with its passive heat loss.

Let us consider to what this minimum heat production is due.³ It is well known that this basal metabolism is in closer relation to the area of the different animals than to their mass, and a tendency has consequently arisen to divide it into two parts : the heat produced by the necessary mechanisms of resting life—the heart and respiration, to mention the obvious—and a second heat production *per se* necessary to maintain the body temperature at a height fixed by causes not to be examined. Of recent years, however, the view has been brought to notice (Dreyer) that the basal exchange in different animals varies in proportion to other things—such as the cross-section of the trachea and of the aorta, with which a much more legitimate causal relationship can be traced. It may be pointed out incidentally that the conception of metabolism as a decomposition of the actually living, and by implication withdrawn from the law of mass action, is gradually fading, and the possibility of expressing physiological combustion processes in terms of the concentration of the material actually decomposed is becoming clearer. Modern tendency, then, moves towards regarding the heat production of the body as a sum of similar processes resulting from the functional activity of the different organs. The intensity of such chemical processes is influenced by the temperature at which they occur—generally, the higher the temperature the more active they are—and this influence is easily noticeable in cold-blooded animals—in

the frog, for example, where the graph of heat production for various temperatures is approximately a straight line from about 22° C. on. That the heat production of warm-blooded animals is similarly influenced can be shown by heating them above their normal temperature, when we find their heat production rising proportionally. An effort to investigate their basal metabolism at lower temperatures is complicated, if not frustrated, by "chemical regulation." In animals which are anaesthetised the regulation point is lowered, and no matter what it be, heating the animal to higher temperatures causes an increase in metabolism, approximated in a graph, as it is in the cold-blooded animal, by a straight line.⁴ We are consequently justified in claiming that the heat production of an animal which is not regulating is a function of its temperature. If we know the heat production (a) at a temperature T , and the gradient (b) of the graph of heat production and temperature, then the heat production at a temperature T_2 will be— $a+b(T_2-T_1)$. Suppose T_2 to be the temperature for which the animal regulates. Now we know that there is a temperature of the outside air with which this heat production is in passive equilibrium. We must then turn to the heat loss of this outside temperature t_o . Heat is, as a rule, lost by conduction and radiation and through evaporation. Naturally, however, the body temperature can be maintained under conditions which admit of heat loss by conduction to external air alone, and we may limit our considerations to this simple case, ignoring the small quantity of heat lost by warming inspired air. The quantity of heat lost will then be proportional to the difference between the temperature of the body and outside air (T_2-t_o), and to the surface of the body s and the conductivity (assumed uniform) of the skin and its covering appendages, and will be inversely proportional to the depth d to which we must go to meet this uniform body temperature—*i.e.*, equal to—

$$\frac{sc}{d} (T_2 - t_o)$$

In addition, however, to conductivity the escape of heat is assisted in the deeper layers of the skin by what we might call the convection element supplied by the capillary circulation in the skin. This will again probably be some function of T_2 , and be also influenced by t , but we can express it for the moment in a given animal, a constant K . If then the animal is in equilibrium with its outside temperature.

$$a + b (T_2 - T_1) = \frac{sc}{d} (T_2 - t_o) + K$$

Now we know that the body regulates so that its subcutaneous temperature is the same as the body temperature for which it is regulating,⁴ until, in other words, the temperature-perceiving mechanism in the skin is at T_2 . As this mechanism is fixed in its position, d in the above equation is fixed, and the only variables in a given case would be T_2 and t_o . If one of these be fixed, the other is also determined. We have no reason to believe that T_2 , the internal temperature of the animal, is the factor that is fixed by causes outside the equation. We can, on the other hand, conceive several ways in which t_o , the outside temperature factor in the equilibrium equation, could be fixed. For example, it could be true the t_o was the temperature, or a close relation to it, of the sea at the time when the warm-blooded animal first evolved from cold-blooded ancestors. This theory does not appear to me the most probable, but I mention it as it is the one which in the absence of relevant facts requires no new assumption. Further discussion on this point is unprofitable, as is also a consideration of the influence of the specific dynamic effect of foods. If then we consider t_o fixed, it is clear that so long as the basal metabolism, the influence of temperature on it, and the circulation of blood through the skin remained unaltered, the body temperature to which the animal regulated would be constant. If, however, the basal metabolism changed or the normal circulation through the skin

altered without proportionate mutual influence, the temperature of the animal would alter also. On these lines the phenomenon of hyperpyrexia and the influence of narcotics on the body temperature would probably fit without obscurity into the scheme.

REFERENCES.

- ¹ Rutner's work can be found summarised in his book *Gesetze des Energieverbrauchs bei der Ernährung*. Leipzig. 1902.
 - ² O'Connor. *Journal of Physiology*. Vol. 49. P. 113. 1915.
 - ³ See Krogh's Monograph on Respiratory Exchange. 1916.
 - ⁴ O'Connor. *Proceedings of Royal Society*. B. Vol. 89. P. 201. 1916.
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ART. XII.—*Continuous Sponges*.^a By SIR WILLIAM J. SMYLY, M.D., F.R.C.P.I.

MANY a good thing is overlooked for want of advertisement, and I think that continuous sponges are an example of this fact. They were first introduced by Dr. Harry Sturgeon Crossen, and a very full account of them was published by him in the *American Journal of Obstetrics*, Vol. 59, 1909, and also in his book on Operative Gynaecology, 1915. His object was to devise some means by which the possibility of a sponge being left in the abdominal cavity during an abdominal operation might be avoided; and he claims that by the use of continuous sponges that object is attained; and, further, that it is the only method in existence which does it. In both statements I entirely agree with him, but I think it advisable to quote his own words:—“The difficulty of guarding absolutely against leaving a sponge in the abdomen is such that entire security against this fatal accident is counted one of the unsolved problems of abdominal work. Practically all writers on the subject state that there is no guarantee against its occurrence, even in routine hospital work, and with all the rules

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland on Friday, February 2, 1916. [For the Discussion on this Paper, see page 209.]

of co-operation and the special apparatus designed to prevent it." Neugebaur, in a most exhaustive consideration of the subject, comes to the conclusion that the accident is, to a certain extent, unavoidable. Schadner, in an excellent paper, states—"So long as surgery continues an art, just so long will foreign bodies continue to be unintentionally left in the abdominal cavity." Findley states—"In former years the abdominal surgeon was seriously disturbed by well-grounded fears of secondary haemorrhage and sepsis, but surgery has mastered these problems to a large degree, and they are little feared and seldom experienced. Now it is the thoughts of the sponge that disturb the night's repose when the report comes that something has gone wrong with our patient. The operator never can rid himself of the feeling of uncertainty as to the possibility of leaving a sponge." This expresses very well the feeling of those who have given attention to this subject and particularly of those who have personally experienced the accident and have been brought face to face with a concrete exemplification of the inadequacy of the usual methods.

The continued occurrence of this fatal accident from the failure of the preventive methods in general use constitute sufficient reason for calling attention to a method which the author has used with much satisfaction for several years. This method gives entire security, and at the same time is simple and inexpensive, and is effective in all conditions of abdominal work—in the emergency operation in the country with unfamiliar assistants, as well as in the routine hospital work. The failure of the safety methods in general use is due to their dependence upon sustained attention concerning the sponges, for it is required elsewhere. A method to be effective under all circumstances must be practically automatic, insuring the removal of all gauze without particular attention on the part of anyone at the time of the operation.

The method which, so far as I know, is in general use in Dublin, is to have a large number of small pads formed

of several layers of gauze sewed together at the edges and a few larger pads to keep back and protect the intestines, the small pads being tied together in bundles of ten before being placed in the steriliser. At the operation a special nurse looks after the sponges, and either collects them in bundles of ten, or, as in the Rotunda Hospital, hangs each sponge upon a hook on a special rack, which is formed of horizontal laths placed one over the other, and having ten hooks on each lath. At the end of the operation, but before the abdominal wound is closed, the sponges are carefully counted by the nurse and theatre sister, and the result is reported to the operator. In this method an error in the count is possible both before the sponges are placed in the steriliser and also at the time of the operation; and, as a matter of fact, I have had the misfortune to meet with this accident twice within recent years. In the first case the nurse reported that a sponge was missing, and a general search ensued. After a time I said to the nurse, "Are you right now?" and she said, "Yes, I am right." So I closed the wound and sent the patient to her bed. Before leaving the hospital, however, I asked the nurse where she had found the sponge. "I didn't find it," she said. "Then why did you tell me you were right?" "I told you," she said, "that a sponge was missing, and I was right." I had the patient brought down again, and found the sponge in her abdomen. The second case was a Wertheim's hysterectomy for cancer of the uterus complicated by a resection of the colon, a very complicated and tedious operation, in which a great number of sponges were employed, just the kind of case in which an accident of the kind was likely to occur. Three weeks afterwards there was a profuse discharge of pus through the abdominal wound, and a sponge was extracted; fortunately, the patient recovered. The only other plan which I have tried was having tapes attached to the sponges and forceps clipped on the tapes, but I soon abandoned it, because it rather increased than diminished my anxieties. At some operations which I had the advantage

of witnessing in London I observed that generally the number of sponges was limited to a dozen, which when soiled were washed by a nurse and used again, a good plan as regards the special risk we are now considering, but seemed to me to be faulty with regard to sepsis. Many other methods are recorded in Dr. Crossen's papers, but none of them superior to that described above, which I have shown to be imperfect.

Having now employed Dr. Crossen's method of continuous sponges for some months, and being well satisfied with the results, I shall describe it to you.

The principle of this method is that no detached piece of gauze shall enter the abdominal cavity. Each piece of gauze introduced for sponging is simply part of a very long piece, the greater part of which is always outside the cavity. As used thus it consists of the following :—Four narrow strips, 10 yards long, 3 inches wide, 6 thicknesses. One wide strip, 5 yards long, 9 inches wide, 4 thicknesses. A similar set in reserve.

For the narrow strips the yard width of gauze is divided into two strips, and each of these, when folded to six thicknesses, is about three inches wide. For the wide strip the full yard width of gauze is used—when folded to four thicknesses it is nine inches wide. When folding, the edges are, of course, turned in, so that no ravelling can be left in the abdomen.

Each narrow strip is packed into a separate bag, 5 inches wide and 10 inches deep. The end of the strip first introduced to the bottom of the bag should be fastened there securely by stitching through and through. Then pack the strip firmly into the bag, in such a way that it will come out easily, a little at a time as needed. Four of these filled bags belong to each set.

For holding the wide strip use a bag 6 by 10 inches, and open at the side instead of at the end. Fold the strip back and forth, thus forming a flattened pile about 5 inches wide. Fasten one end of the strip securely to the bottom of the bag by sewing through and through. Then place

the folded strip in the bag in such a way that, when pulled upon, it will come out a little at a time, as a wide strip suitable for packing back the intestines. One wide strip and four narrow strips constitute one set, and are to be wrapped together in a cloth for sterilisation in the usual way. A second sterilised set should be held in reserve.

Method of using the Sponges.—Just before the incision is made a bag containing a narrow strip is fastened at the side of the abdomen by pinning it to the sterile sheet. The mouth of the bag lies conveniently near the wound, but not in the way. The end of the gauze strip is pulled out, as needed for sponging. In a case where but little sponging is required, one bag will be sufficient. In a case where more sponging is likely to be required, it is well to fasten a bag on each side of the abdomen at the beginning of the operation; this gives a sponge immediately at hand for both operator and the first assistant. As fresh portions of the strip are drawn out for use the soiled portions are dropped down beside the bag, and off the table. Troublesome accumulation of folds of the strip about the wound may be prevented by always dropping the soiled portion outside the field close to the bag. The bag containing the wide strip wrung out of hot saline solution, if required, is laid on the abdomen above the wound and secured by two safety pins. The disposing of the soiled end of the sponge is the only difficulty I have met with in using these sponges. An inexperienced assistant will accumulate numerous folds around the wound and instruments and his own arms until he resembles the statue of Laocöon contending with the serpents. He will, however, soon learn to drop it out of the way. A more serious objection, however, especially in septic cases, is that it is liable to soil his sterilised overall. This difficulty, however, is obviated by a device introduced by Wakefield (*American Journal of Obstetrics*, October, 1912), and modified by Crossen. It is to have a large bag made of heavy duck

and divided into two compartments fastened to the sterilised sheet. In one compartment is placed the bag containing the continuous sponge, and into the other are thrust the soiled portions as used. I use batiste for these bags.

Practice has convinced me that these sponges are a very great improvement, and are in no case inferior to separate ones; and they have absolutely abolished all risk of leaving sponges in the abdomen. They have, besides, some minor advantages which are worth considering. The nurses are saved an immense amount of time and labour which the cutting out and stitching of the separate pads involved, and which I have often remarked when visiting hospitals in the afternoon or evening, and have seen nurses seated at sewing machines making them. And the theatre sister in one of our general hospitals told me that it took on an average two hours to prepare the sponges for each operation. A continuous sponge can be cut, folded and placed in its bag in four minutes; and they save the worry and anxiety of counting them, and therefore they are most popular with the nurses. Further, they are economical, because not only is the special nurse hitherto employed to count the separate pads eliminated, but the continuous sponges and bags are so easily washed and sterilised that they can be used again several times.

In vaginal work, too, where the operator has to do much of the sponging himself, I have found that, by attaching the bag to the sterilised sheet in the left inguinal region, with its mouth hanging over the fold of the groin, the strip when drawn out hangs in a most convenient position, always at hand when wanted.

In conclusion, I would repeat that, having used these sponges for several months, I am thoroughly convinced that they are the best in all and every case, and am surprised that they have not yet come into general use, and for that reason I have thought it advisable to introduce them to your notice.

ART. XIII.—*A Factor of Use in Estimating Cranial Height.*^a By J. R. D. HOLTBY, M.B., B.S.; Chief Demonstrator of Anatomy, Trinity College, Dublin.

SOME time ago I received some old Irish skulls for examination and report. As the greater portion of the base was missing in each case it became a question as to how the altitudinal index was to be estimated. For this purpose the basio-bregmatic height is required, and only the opisthionic portion of the foramen magnum remained. It, therefore, occurred to me to inquire if there was, as one would expect, any constant relationship between the basio-bregmatic and opisthio-bregmatic heights. This communication deals with the results obtained.

Thirty-five skulls were examined. These were collected from various sources, so as to give as representative a view as possible. The series contained specimens of modern and ancient Irish, Australians, Hindoos, Siamese and Peruvians. Three young skulls were included in the survey. The method adopted was to estimate the cephalic index, so as to ascertain the type, then to measure the actual basio- and opisthio-bregmatic heights. The proportion between these two latter figures was estimated to two decimal places and the mean taken of these proportions. In this way was obtained a mean factor, which, when multiplied by the opisthio-bregmatic height, should yield the basio-bregmatic measurement.

This mean factor was 0.9028, or for practical purposes 0.903. Roughly, therefore, the basio-bregmatic measurement is 0.9 of the opisthio-bregmatic.

This factor was now used, and the calculated basio-bregmatic height compared with the actual measurement.

For example :—

Opisthio-bregmatic height, 150 m.m.

Calculated basio-bregmatic, 135.54 m.m.

Measured basio-bregmatic 135. m.m.

In 15 cases out of 35 the factor 0.903 gave an absolutely

* Read before the Section of Anatomy and Physiology in the Royal Academy of Medicine in Ireland on Friday, December 15th, 1916.

accurate result. In 13 other examples the error was only 2 m.m.

In the remaining seven cases the error would have been 4 m.m. in five examples, and 7-8 m.m. in three cases. The basio-bregmatic height is said to be in any one race the least variable cranial measurement, though it frequently varies up to 10 m.m. The greatest error, if it had been calculated by this factor, would be 8 m.m. (well within the normal range of variation), and this would only occur in about 6 per cent. of cases.

One would imagine that the relationship between basio- and opisthio-bregmatic measurements might vary with two things—

1. Inclination of the foramen magnum. In Europeans this is inclined downwards and forwards; in Australians, downwards and backwards from the horizontal.
2. Position of the bregma, which will vary in long and broad skulls, according to the direction in which the chief growth took place.

Inclination of the foramen magnum makes a very small difference; the greatest error obtained by use of this factor in the case of Australian specimens being frequently reached, or even exceeded, by European examples. The error in the former cases was only 2 m.m.

Influence of Shape of the Skull.—The smallest number of errors was obtained in dolichocephalic or long-headed specimens. In mesaticephalic examples the error was sometimes 2 m.m., either too much or too little.

Reasonably accurate estimations may be made by use of this factor in dolicho-, mesati-, and brachy-cephalic skulls; though extreme errors, such as 6-8 m.m., are found in each group. I am not satisfied that the shape of the skull has any definite and invariable influence on the factor.

Conclusions—1. By use of the factor here given (0.90) we can readily estimate the basio-bregmatic height of a skull if the opisthio-bregmatic measurement be given. The method is thus valuable in the examination of old or rare specimens, which are so often in a damaged condition when received.

2. The error in the result obtained by this method is usually very small—only 2-3 m.m., and in no case did it exceed 8 m.m.

3. The factor can be used for any skull, and even holds true in the case of specimens from children.

Appended are some measurements showing—

- (a) The cephalic index.
- (b) The true factor in each particular case necessary to give the measured basio-bregmatic height.
- (c) The measured basio-bregmatic height.
- (d) The basio-bregmatic height as calculated by the use of the factor 0.90.
- (e) The source of the skull, so far as was known.

<i>a</i> Cephalic Index	<i>b</i> True Factor	<i>c</i> Measured BB height	<i>d</i> Calculated BB height	<i>e</i> Nature and Source
88	0.94	141 mm.	135.5 mm.	Siam
69	0.92	124 mm.	121 mm.	Australian
75.8	0.90	128 mm.	128.7 mm.	Old Irish
76.4	0.90	128 mm.	128 mm.	Old skull from Howth
80	0.90	128 mm.	128 mm.	Modern Irish
70	0.90	135 mm.	134.1 mm.	Australian
77	0.93	138 mm.	132.7 mm.	Hindu
—	0.90	118 mm.	117 mm.	Young modern Irish
—	0.90	111 mm.	112 mm.	Young Peruvian

The chief value of the altitudinal index lies in its comparison with the breadth or cephalic index, the figures usually being much the same in each, so that a dolichocephalic skull (below 75) would usually show an altitudinal index of below 75. The maximum error obtained by calculating the altitudinal index by this method would be 5 (five); a deviation from the correct figure which would not be likely to cause any erroneous conclusions to be formed.

PART II. REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Manual of Psychiatry. By J. ROGUES DE FURSAC, M.D.; formerly Chief of Clinic at the Medical Faculty of Paris; Physician-in-Chief of the Public Insane Asylums of the Seine Department; and A. J. ROSANOFF, M.D.; First Assistant Physician, King's Park State Hospital, New York. Fourth Edition, revised and enlarged. New York : John Wiley & Sons, Inc. London : Chapman & Hall, Ltd. 1906. Demy 8vo. Pp. xi + 522.

OWING to the European War, the necessary co-operation between the two authors for the production of a work of this kind was not found possible ; it was therefore decided that the preparation of this edition should be placed in the hands of the American author. In the result, we may state, he has been markedly successful, for he has given us a work full of modern thought upon mental illness.

The first part of the book, which deals with general psychiatry, has been largely re-written ; and in the second part, which is devoted to special psychiatry, the chapters in connection with Huntington's chorea, cerebral syphilis, and the traumatic psychoses are almost wholly new.

In a previous edition of the work an apology was made for following Kraepelin's classification of mental disorders ; since then, however, this classification has been almost universally recognised as a very distinct advance, and it has succeeded in supplanting to a large extent the arrangement of clinical entities as evolved by other men.

A large proportion of the book is taken up with symptomatology and the practice of psychiatry. We think that this is a decided advantage, and especially will it be found

so by those who have not had the experience gained by residence in a modern mental hospital.

In emphasising the importance to be laid upon "history taking," the author states that satisfactory results cannot be obtained without a method of *field investigation*. This is carried out by *field workers*, who are attached to the institutions concerned. The Eugenics Record Office, the New York School of Philanthropy, and several Universities offer courses to meet the demand for trained persons for such positions. Their duties afford opportunities of visiting the homes of the alienated, interviewing their relatives and friends, and studying the environment.

It is a form of social service that may do much good, and it might, with advantage, be copied elsewhere.

The importance of special diagnostic procedures in the investigation of disease becomes larger as time goes on. A good deal of emphasis is now laid upon their value in mental work, and in this book there will be found excellent descriptions of lumbar puncture, Wassermann's reaction and various chemical tests, in addition to the mental test of Binet-Simon and those of association.

In the chapter on *Aëtiology*, a table is given showing the relative frequency of certain psychoses in people of different race, which tends to demonstrate that the Irish are most liable to the alcoholic psychoses. This statement is the result of an investigation made at Manhattan State Hospital by George H. Kirby for the year 1908. Out of 408 examinations of the Irish insane, 27.69 per cent. were found to be suffering from psychoses caused by alcoholism. This percentage, when compared with that of the race coming nearest in this respect, would appear to be phenomenally high.

In an account of the other preventable disease—General Paralysis—there is, however, some satisfaction to be found; for this entity would appear to be less prevalent amongst Irish-Americans than any other race resident in the States.

H. R. C. R.

The Dublin University Calendar for the Year 1916-1917.

Volume II. Dublin : Hodges, Figgis & Co., Ltd.
1917. 8vo. Pp. v + 194.

THIS second volume of the University Calendar for the current year contains the usual academic information, including a continuation of the lists in Volume III. of the issue for the year 1912-13.

One turns with keen interest to the statistics of present members of Trinity College in this third year of the Great War. The numbers are given at page 132. The total number of students on the College Books under the degree of Master of Arts is 732, distributed as follows :—

Women :—	Non-foundation Scholars	14	}
	Pensioners	175	
	Sizars	9	
198			
Men :—	Scholars of the House	58	}
	Pensioners	440	
	Sizars, Ex-sizars, and Sizar- ship Exhibitioners	36	
534			

Twice in each year the number reaches a maximum—namely, just before the first Saturday in June, and just before the first Saturday in December. This maximum for December, 1916, was $822 = 732 + 100 - 0 - 10$.

The above number 732 does not include the names of students in the Medical School or in the Law School who have not paid the last half-yearly Arts fee.

The Senate of the University embraces 337 names.

The University Electors number 4,203. Among them the name of the late candidate for Parliament, Sir Robert Henry Woods, does not appear. Nor is Sir Robert a member of the Senate, although he possesses the degrees of M.D. and of M.Ch., and is Honorary Professor of Laryngology and Otology—a Chair which was “founded in 1916 for present holder only.”

The list of University Electors has evidently undergone

considerable revision in connection with the recent Parliamentary Election. At it, by the way, only 2,160 of the electors voted, or 51.4 per cent. A large number were inaccessible through serving their King and Country abroad at the various seats of war.

RECENT WORKS ON THE EYE.

1. *Extra-Ocular Pressure and Myopia.* By ISLAY B. MUIRHEAD, M.D. London: John Bale, Sons & Danielsson, Ltd., Oxford House. 1916.
2. *Diseases of the Eye.* By GEORGE E. DE SCHWEINITZ, M.D.; Prof. of Ophthalmology in the University of Pennsylvania. New Eighth Edition, enlarged and reset. With 386 Text Illustrations and 7 Chromo-Lithographic Plates. Philadelphia and London: W. B. Saunders Co. 1916. 8vo. Pp. 754.
1. THE author—himself a myope of 62 years—very strongly holds the view that convergence does not tend to increase myopia, and that glasses should not be worn by myopes, except to make clear distant objects. If they wear correcting lenses constantly, they must as constantly use their accommodation to overcome the correction when reading, &c. And so a state of eye strain is set up, with consequent worry to the patient. Therefore, if you prescribe glasses—undercorrect, according to our author. At the same time he takes for granted "that the myopia towards which mankind are advancing is a moderate myopia, whose progress must before long be arrested when the diminution of pressure accompanying the change from barbarism to culture reaches its inevitable limit."

Now such a view as is set forth in this quotation accounts very well for the cases of moderate myopia, but we think that most ophthalmic surgeons would prescribe nearly full constant correction for children exhibiting, say, over 4 D of myopia. Absolute full correction would possibly be impracticable. And this would be done to reduce the convergence (because the child would naturally hold the book

further away) when the glasses were on. Dr. Muirhead has written this book, however, to prove that the convergence does not tend to increase the myopia, and those who are interested in the question should, without doubt, read it.

2. THIS text-book has now attained its eighth edition since 1892, and an excellent edition it is.

Dr. de Schweinitz has taken much care to incorporate in it all the newest departures in ophthalmic surgery, and has given us a thoroughly up-to-date book. When the *tout ensemble* of the book is so excellent it is difficult to find opportunities to criticise, or even to suggest. But there are one or two points to which perhaps we may draw attention. We wish that Dr. de Schweinitz had had the courage of his convictions, and had removed the name "Rheumatic Iritis" from the book altogether. The term has given rise to more mistakes in treatment than one could imagine. We hope that from the next edition the term will have disappeared.

In the sub-section treating of traumatic cataract we would have liked more detailed treatment of it as a separate entity. It is a very common eye trouble amongst the agricultural population, who are just the people furthest removed from the services of a specialist and are most at the mercy of the general practitioner. To such people it would be something of a boon if he had a more clearly expressed, definite line of treatment when he meets such cases.

In Elliott's operation of corneo-scleral trephining in glaucoma, most ophthalmic surgeons suture the flap with a continuous suture, which is left untied, rather than use "one or two sutures."

It can easily be imagined that when the above represents all we can offer in the way of suggestion—and this from a purely personal point of view—we have a very high opinion of the merits of Dr. de Schweinitz's book, and can most cordially recommend it to the members of the medical profession in Ireland.

A Short Practice of Gynaecology for Medical Students.
By HENRY JELLETT, M.D. (Dublin University),
F.R.C.P.I.; Master of the Rotunda Hospital, Dublin;
&c. London: J. & A. Churchill. 1917. Demy 8vo.
Pp. xi + 424.

ABOUT three months have elapsed since we accorded a most favourable review to Dr. Jellett's Practice of Gynaecology. The present volume is condensed to suit students. The chapters on vaccine-therapy and radio-therapy have been omitted. Also the descriptions of many operations, which are necessary for the surgeon but are unnecessary for the student, are not included. With these exceptions, the "Practice" and the "Short Practice" are nearly similar, and we recommend the latter most heartily as the "last word" in students' handbooks.

Revista de Medicina y Cirugia de la Habana. Vol.
XXI., No. 1. Printed by the Association of the Medical
Press, Cuba.

THIS volume of our esteemed contemporary opens with an interesting article on the epidemiological and experimental study of beri-beri by Dr. Lebredo. By a series of carefully conducted experiments he produced polyneuritis in animals, analogous to that produced by beri-beri infection, by feeding them on shelled rice of an inferior quality. In the inferior grades of shelled rice the author claims to have found the germ of the disease, which he names "amylozoon." This parasite is unaffected by twenty minutes' boiling in water at a temperature of 212 degrees F. Dr. Lebredo writes there are "two etiological agents: one purely alimentary, promoting polyneuritis of a chronic type, and a pre-disposition [to beri-beri]; the other the toxin of the rice [amylozoon], causing the phenomena of acute and sub-acute poisoning, and sometimes genuine chronic beri-beri."

The author, chief of the Sanitary Department of the

Republic of Cuba, has had an unequalled experience of the disease, and anything he publishes on it is worthy of consideration ; but, so far, all our information on the subject goes to show that the absence or deficiency of the amount of nitrogen in food is the cause of epidemics of beri-beri—this, we think, has been conclusively shown by the stamping out of the disease in their Navy by our allies, the Japanese ; and, as we read Dr. Lebredo's experiments, they strengthen this opinion. Withal the paper is of permanent value as containing a good clinical picture of the disease.

Intralaryngeal Polypi, by Dr. Lauda, is a useful practical contribution on non-malignant tumours of the vocal cords and their surgical treatment, which well repays reading.

Dr. Stincer's paper, "Appendicitis and Typhoid Fever," gives the clinical history of cases in which much difficulty was experienced in differentiating between typhoid fever and appendicitis. And that prompt decision which laymen demand of their physicians cannot, in many cases, be always secured.

"An Extraordinary Cæsarean Operation" is the title of a briefly-told Cæsarean operation performed under unusual conditions. During the bombardment of Rheims it became necessary to transfer the lying-in patients of the Maternity Hospital from their wards to a cellar. During the transfer a young patient's abdominal wall was opened freely by a shell, and immediately the surgeon in charge operated through the wound.

A Treatise on Materia Medica and Therapeutics. By RAKHALDAS GHOSH, L.M.S. Cal. Univ. Edited by Lieut.-Colonel B. DEARE, with the assistance of BIRENDRA N. GHOSH. New Edition. Calcutta : Hilton & Co. 1916. Cr. 8vo. Pp. xii + 698.

An earlier edition of Dr. Ghosh's Treatise was favourably noticed in this Journal of May, 1914. The first edition (of Vol. I.) appeared in 1901.

We now welcome a new edition, which speaks for its popularity and success, and both are well deserved.

For Indian students, especially, it is the best work they could procure, and vernacular Indian synonyms are supplied for all the B. P. drugs. It is a thoroughly reliable, useful, and up-to-date book, and we can unreservedly commend it to our readers.

The text has been carefully revised, and all new pharmaceutical work has been incorporated, with the assistance of Major Greig (Serum and Vaccine Therapy) and of Dr. B. N. Ghosh.

Encyclopædia Medica. Second Edition. Under the General Editorship of J. W. BALLANTYNE, M.D., C.M., F.R.C.P.E. Volume IV. Ear to Filariasis. Edinburgh and London : W. Green & Son, Ltd. 1916. Large 8vo. Pp. viii + 685.

ONE hundred and seventy-two pages of this large octavo volume are assigned to Diseases of the Ear and their treatment. Only one of ten articles on this subject is new—that on Otosclerosis, by Mr. J. S. Fraser, M.B., F.R.C.S. (Edin.), Asst. Surg. to the Ear, Nose and Throat Department of the Royal Infirmary, Edinburgh, and Lecturer on Diseases of the Ear, Throat and Nose in the School of Medicine of the Royal Colleges, Edinburgh. This article is illustrated by a plate containing six figures, and concludes with a bibliography of thirty entries.

The General Editor contributes a new article on Eclampsia and the Pre-eclamptic State. He has also revised his article on Human Embryology, as well as Sir Halliday Croom's monograph on Ectopic Gestation in collaboration with the author.

A new article which will attract attention is that on Eugenics, by Dr. Caleb Williams Saleeby, M.D., F.R.S. (Edin.).

Mr. A. H. Tubby, M.S. (Lond.), F.R.C.S. (Eng.), of Westminster Hospital, has almost wholly rewritten his classical account of the Injuries and Diseases of Fasciæ.

Skin Affections are represented in this volume by Dr. H. Leslie Roberts' rewritten article on Eczema, Dr. R. Cranston Low's rewritten article on Erythema, and Dr. Norman Walker's revised article on Favus. The two last are well illustrated by coloured plates.

As usual, this volume is splendidly brought out by the publishers.

Boletin de Medicina è Higiene. Barranquilla, República de Colombia : El Siglo. Año. I., No. 3. Marzo de 1916.

THIS, the third number of the Medical Monthly of Colombia, contains an interesting biographical notice of Dr. O. A. Noguera, President of the Medical Society of Barranquilla and Director of Hygiene of the Atlantic Department of Colombia. From his earliest years Dr. Noguera was carefully and judiciously trained to fit him for the honours that his medical brethren so freely bestowed on him. After a good preliminary education at Rogota, he at fourteen years of age came to Hamburg, where he graduated as Bachelor; thence he pursued his medical studies at Leipzig, Munich, and Berlin, in which last city he graduated as M.D. and M.Ch. On his return from Europe, in 1909, he founded the Medical Society of Barranquilla, and as Dr. Zea Uribe well says : "In his daily lectures his words are to his audience as those of an authorized missionary of science and of truth." And Professor Renaut writes of him that he is an enthusiastic student and a compassionate physician. Such a man truly deserves the honours his professional brethren bestow on him and his country promotes him to, as a benefactor of the nation and of science.

Dr. Arango contributes a good paper on "Granular Conjunctivitis," which gives an interesting clinical picture of the tropical types of the disease. Dr. R. C. Cabot writes of abdominal aortic pulsation, and draws attention to the injurious effect on the patient of repeated examinations made to ensure that an abdominal aortic aneurysm

was not being overlooked. Re-examination of nervous patients is to be avoided if possible; but re-examination is necessary in many cases of suspected aneurysm of the abdominal aorta, a disease which often simulates or is simulated by other pathological conditions. "The Treatment of Tetanus" is the title of Dr. E. de la Hoz's paper, in which he gives a table of 823 cases of the disease, which include the statistics of the years 1900 and 1915, and up to the 25th of April, 1916. Of these, 519 were infants of from 1 to 10 days' old; this terrible mortality is ascribed to a disgraceful want of cleanliness of the mothers. The author also draws attention to the death of the newly-born from gangrene of the funis from lice swarms, and truly says hygienic laws should be enforced and the necessity of cleanliness be taught; the use of anti-tetanic serum injections, the administration of chloral or chloroform, and in some cases special injections of physostigmine or beta-cocaine—these last are supplemented by the use of opium or chloral. As a hypodermic at the site of the local sore, Dr. L. de Montille uses the following: Phenol 1 gram, oil of olives 10 grams, ether 21, to dissolve the oil; of this he gives 2 to 5 minims every two hours, gradually reducing the frequency of administration until the injection is used only twice daily. He claims that this treatment (1) rapidly detetanises the patient; (2) is easy of administration; (3) is active in the dose prescribed; (4) the cure is positive and permanent, and effected in from ten to twelve days. As a domestic remedy alligator's oil, warmed, is rubbed into the skin of the sufferer several times a day, and its efficiency is believed to be due to the substance to which it owes its peculiar musk-like odour. Dr. Noguera has yet a long way to travel before the Colombians reach the age of reason. The number concludes with an article on the dietary of the soldier, and very properly suggests that the use of fresh native vegetables should be substituted for dried and preserved European ones. A liberal allowance of carbohydrate is recommended, and as a drink coffee, oatmeal water and milk are recommended. Potable water should be filtered and fresh, and provided in abundance.

Bulletin of the Woman's Hospital in the State of New York. Pathological Number, from the Thompson Pathological Laboratory. January, 1917. Pp. 54.

In our opinion the hospitals which do not issue medical and surgical reports are deserving of the greatest censure. And the governments and corporations which give grants to hospitals should insist that these hospitals should publish comprehensive reports. The Bulletin before us is an attempt in the right direction. It consists of a paper covered 8vo. volume of 54 pages, in the first six of which are included the names of the governors and doctors, and a geographical description of the hospital. After this we find seven papers dealing with the following subjects:—
1. Incubators and thermo-regulators. 2. Ectodermal structures in dermoid cystomata. 3. Coagulability of menstrual blood. 4. Routine histological technique of the pathological department. 5. Adenomyoma of the round ligament. 6. Carcinoma uteri and non-cancerous lesions. 7. Primary carcinoma of the Fallopian tube. These are extremely interesting, but in a report of this kind we should like to have seen the statistics of work done in addition to these monographs. The report is dated January, 1917, but it is left to the imagination to discover whether the publication is annual or monthly, or whether it has ever been published before. As the hospital was established in 1855 by Dr. Marion Sims, it seems likely that the work of the preceding half-century has not been left unrecorded.

1. *Charlotte Medical Journal.* Vol. 73. No. 6. Charlotte, N. C. June, 1916.

THIS number of the *Charlotte Medical Journal* is rich in a series of papers of practical value, the majority of which were read at the meeting of the North Carolina Medical Society's meeting at Charleston. Dr. Rosmer reports the good results he obtained in his midwifery practice from the use of pituitary extract. Dr. McCain, of the North Carolina Sanatorium, in his paper, "The Differential Diagnosis

of Tuberculosis," emphasises the value of the thermometer in the diagnosis of tuberculosis in its early stage. Dr. Thompson, also of the Sanatorium, tells of the employment of getting a patient to cough to elicit latent râles in pulmonary tuberculosis, and gives his experience of this practice deduced from many hundred cases. The Drs. Faisons' article, "Dangerous Pathological conditions due to pent up Local Infections," is a useful and interesting paper. He brings many illustrative cases of local manifestations of constitutional sepsis, which are so graphically described that John Abernethy's "Local Manifestations of Constitutional Diseases" is recalled to memory: that great work which in 1789 and almost to 1850 had a place in every good medical library. The Drs. Faisons' paper is almost as suggestive as the "Symptoms and their Interpretation," by Dr. J. MacKenzie. That the contribution is a short one does not detract from its value, indeed, we think it adds to it, for, as a rule, short papers are read, and long ones shunned. And we may just refer to Ollier Lyons' short paper on excision of gastric ulcer, which appeared in the *Lyon Médical*, and revolutionised the treatment of gastric ulcer throughout the medical world. "A plea for the Early Recognition and Relief of Intestinal Obstruction," by Dr. Glenn, is a timely admonition against the evil of postponing operation in such cases. He shows that the mortality is exactly in proportion to the delay; and in some cases of torsion of the intestines hours make all the difference between life and death. The opening address of the President of the North Carolina Medical Society makes mention of the fact that the "State legislature in 1913 enacted a law by which any county in North Carolina could by petition and election issue bonds to build, and levy a tax to support, county hospitals." Portia-like, "I stand here for the law;" and Dr. Fletcher, the President, had before him a worthy example of the growth of the recognition of Medicine preventive and curative. We have said enough to show how helpful our Southern American friends are to the progress of Medicine, and how valuable is their current medical literature.

2. *Charlotte Medical Journal.* Vol. 73. No. 11. Charlotte, N. C. November, 1916.

THE many practical contributions in this number of the "Charlotte Medical Journal" are, as usual, of great interest and value. "The use of Radium in Malignant and Non-malignant Conditions," by Dr. Gaston Torrance, commences with a résumé of all the cases reported of the use of radium in malignant cases, and is followed by a summary of a large number of cases in his own practice, which well repay reading. It is too soon to say that a remedy has been found for carcinoma and its consequences; yet we can say that in the discovery of radium Madame Currie provided us with a therapeutic agent which has proved more serviceable in malignant disease than any other; and the only one which gives a reasonable hope of successfully treating carcinoma. "The Modern Treatment of Toxæmia of Pregnancy," by Dr. S. S. Coe, covers very familiar ground and is valuable as reminding us that the treatment of eclampsia leaves much to be desired, as does its prophylaxis, both of which will, we fear, remain in their present unsatisfactory condition until we learn more of the pathology of the disease. The current theory that the disease is due to "a disturbance of nitrogenous metabolism" adds nothing to our knowledge, and simply acts as a cloak for our ignorance.

"Psychotherapy in Digestive Diseases," by Dr. G. M. Niles, is a suggestive paper on neurotic dyspepsia, which is one of the most troublesome maladies to treat. Patients suffering from this peculiar form of dyspepsia go from physician to physician repeating to each their oft-told tale of constipation, indigestion and insomnia. They call for great patience and infinite tact with unbounded sympathy, and do not always make a corresponding purse-opening. From Dr. Niles's pen picture the American specimen is a replica of the European one.

Dr. Williams writes about tuberculo-phylacogens. He says "the physiological action of phylacogen is

very similar to that of the vaccines, and I believe it to be entitled to as high (if not higher) an endorsement by the profession. It creates anti-bodies making for immunity; it exerts an anti-toxic action; in tuberculosis it seems to hasten the liquefaction of the caseous materials, and improves the elimination by expectoration." We have no doubt whatever of Dr. Williams' whole-hearted belief in the great therapeutic value of phylacogen; but we regret that he should so express his views that an enterprising proprietary vendor could utilise them unchanged.

Dr. Robertson's article on Aneurysms is a good type of a surgical paper; but unfortunately his second sentence ascribes the credit of ligation in the treatment of aneurysms to Anel (1710), whereas it was performed by Antyllus in the third century, and his method of ligature is described by Paulus Ægineta, Rhazes, and Albucasis, and was adopted by Syme of Edinburgh, in his historical case. Although Erichsen, writing in 1844 ("Observations on Aneurysm"), makes no mention of it. We refer to this because we think the omission was purely an inadvertence in an otherwise deeply interesting communication, and opportune in the present day.

Dr. Mason tells of the successful removal of a button from the oesophagus of a three year old boy, eight days after it was swallowed, by means of a serrated laryngeal forceps. An editorial on "Hæmoglobinuria," brings prominently forward the value of copper sulpho-carbolate, an anti-septic remedy which has found little favour on this side of the Atlantic, probably due to the disappointment over the use of the sulpho-carbolates of the alkalies. The writer suggests that as a prophylactic measure the plasmodia carriers should be detained in quarantine until the plasmodia are completely eradicated from their blood.

An excellent account is given of the annual opening of the Medical College of South Carolina, from which it appears that the old college, rich in its inheritance of illustrious traditions, was never more flourishing.

The Interstate Medical Journal. Vol. XXIII. No. 7.

THE above number of the *Interstate Medical Journal* contains many excellent original papers on subjects of present day interest to the members of the medical profession.

Dr. Pickerill (Major, N.Z.D.C.) in a paper on "Treatment of Fractured Mandible Accompanying Gunshot Wounds," not only draws attention to the defects of existing apparatus for such accidents, but describes by illustration and letterpress a splint which from an anatomical and surgical point of view seems well suited for the requirements of such wounds. We cannot, however, agree with the author that the splint is either easy of application or readily to be adjusted. It is, however, due to the author to say that he is one of the first to point out how difficult it is to coapt such fractures and retain the parts in position until union takes place. And we may further say it is only such a splint as his that could meet the requirements of a case in which there had been a considerable loss of bone tissue. Drs. Williams and Burdick write of sputum culture. They note that during the recent epidemic of "grip," which commenced in December, 1915, the sputum cultures from 58 individuals gave streptococci in 90 per cent. of the specimens examined; and they add that this streptococcus, which is lanceolate in shape, usually found in pairs or very short chains, is Gram-positive, and has the appearance of a pneumococcus, is the causative germ of the disease. The following sixteen pages are given to the "Report of Twelve Cases of Pellagra and its Relation to Mental Disease," a peculiarly arid piece of writing. You travel through a desert interspersed with sand hummocks. We are told in severely scientific language of the psychotic types of pellagra, though the author produces no evidence of a psychotic cause. The twelve cases cited are wholly irrelevant to the argument. Twelve poor demented creatures in a state of semi-starvation happen to be suffering from pellagra, and the author classifies them into three groups.

We have read nothing more ridiculous since we read of the labours of the Philosophers of Laputa. They held a scientific position in the State, were highly honoured, respected as specialists, and were immortalised by Swift.

“Food and Drug Idiosyncrasy,” by Dr. P. Getson, is a subject in which we all are more or less interested; one for which an explanation has been sought prior to the days of Hippocrates, and unfortunately it still awaits a solution. Dr. Getson in the paper before us offers an explanation which is neither more nor less than a modernised re-hash in highly technical language of the theories of Beddoes, for which that great physician and philanthropist claimed universal application. Stripped of technicalities, Dr. Getson’s theory is that an excess or deficiency of any essential constituent may create an idiosyncrasy. In certain idiosyncrasies he assumes that the condition necessary for his hypothesis exists, and all the rest naturally follows. Diedrich Knickerbocker, more than a hundred years ago, wrote that the tail of a comet was all that a philosopher required in order to work miracles. Today a philosopher needs but a theory, and Dr. Getson’s is, unconsciously we doubt not, Beddoes, enunciated at Birmingham in the closing years of the eighteenth and the beginning of the nineteenth century; and more fully tested in Bristol, for Dr. Beddoes, by Davy. Dr. Getson’s experiments are unsatisfactory, and his deductions from them seem to us to be forced. The problem of idiosyncrasy which baffled Beddoes is yet to be solved.

Dr. Cornwall’s paper on “The Treatment of Lobar Pneumonia” is the result of his experience of a continuous series of 124 cases; in which the gross mortality was 16 per cent. It may be thus summarised:—Keep the patient in bed in the horizontal position until at least ten days after defervescence; supply plenty of fresh air. As food, give modified milk, cereal gruels, fruit juice, and milk sugar. His medication consists of sodium chloride, calcium chloride or lactate and water. Cardiac stimuli when necessary, strychnine 1/60

grain doses, digitalin 1/100 grain doses, or strophanthus tincture. Opiates may be necessary in the early stage in small doses, never for the relief of pain, or if respiration is laboured or shallow. Avoid purgatives, although in the early stages an enema of soap suds and oil is sometimes valuable. "Chronic Disease," by Dr. J. M. Taylor, reads to us as an address to lay readers, and is outside the scope of medical criticism. "Family Albinism," by Dr. F. C. Knowles, is an excellent well thought out contribution. He considers that albinism should be classed under the recessive type of inheritance. We would have preferred the title atavism; but it is simply a choice of words. "Heliotherapay in Colorado," by Dr. C. F. Gardiner, advocates the use of sun baths, tells how they should be administered, and gives the most approved theory of the value of solar energy on the human body; and tells it all in a very readable manner. The illustrations of the paper add much to its value. As we read of the beneficial effects of these baths we regret that our climate does not lend itself to sun bath treatment.

Dr. Verbrycke in a short paper, "Cancer of the Stomach," emphasises the difficulties of diagnostinating cancer of the stomach; the relative importance of the various diagnostic means; and the value of exploratory laparotomy in apparently hopeless cases. "Malignant Growth in the New-born," by Dr. Rowell, is a short account of a well-told clinical picture, of an instance of fatal haemorrhage in a new-born infant, caused by a malignant growth of melanotic sarcoma, which had its origin in the wall of the oesophagus and penetrated the aorta. Space does not admit of our extending the notice to other valuable contributions which appear in our contemporary, but the monthly is so well known and appreciated that we feel confident that from what we have noted our readers will recognise, as we desire they should, that the *Interstate Medical Journal* is worthy of support, and is rich in original communications of sterling value.

An Almanack for the Year of Our Lord, 1917. By JOSEPH WHITAKER, F.S.A. London : 12 Warwick Lane, Paternoster Row. 8vo. Pp. 1049.

RATHER belated in date of publication, owing to shortage of labour, Whitaker's Almanack for 1917 is as usual replete with information, and therefore becomes an indispensable *luxury*, seeing that its price has been increased to three shillings and sixpence, bound in boards.

In the present issue the history of the Great War by sea and land is continued. A series of articles, each written by an expert in his own department, on British Empire Industries has been included, and will be found at pages 860 *et seq.* There are also articles on the financial side of the war, British Imports and Enemy Trade Labour and the War, and Aeronautics. "Combating Venereal Diseases" (page 816) gives a summary of the contents of the final report of the Royal Commission appointed in 1913 to inquire into the prevalence of these diseases in the United Kingdom and the means by which they could be alleviated or prevented.

The effect of the war on the contents of the Almanack may be seen in the much curtailed Army List, the omission of the now obsolete table of ships of the Navy, and the considerable enlargement of the section devoted to honours and decorations. From the list of War Honours the names of the recipients of the Military Cross are left out—an omission which perhaps calls for friendly criticism.

In the Calendar some interesting additions have been made. The dates are given at which the zodiacal light may be seen after dusk on moonless nights in early spring or before dawn in late autumn. The time at which "Civil Twilight" ends is specified month by month. It ends when the sun has sunk 9 degrees below the horizon, whereas night does not begin until the sun is 18 degrees below the horizon.

PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORD.

A Case of Abscess of the Tongue. By DENIS HENNESSY,
L.R.C.P. & S. Edin.; L.R.F.P.S. Glas.; Medical Officer,
Bandon Dispensary, Co. Cork.

On January 18th I was called to J. C., aged 35, a strong countryman, who was never ill before then. He complained of a sore throat. He was apparently very ill, and had a temperature of 103° F.; pulse, 110; inclined to perspire.

I examined his throat, and found his tonsils were not swollen. There was a swelling in the sub-lingual region; his tongue was a bit swollen and tender to touch. I put him on salicylates and gave him an antiseptic mouth-wash and a saline purgative. Saw him again next day; found him no better, but tongue more swollen and speech thicker. Told him to continue treatment, and apply hot poultices to throat. I went to see him again next day, and took electric torch, tongue-depressor, scalpels, &c., thinking I might find pus somewhere. I found the man much worse; tongue very swollen, filling up, and protruding from the mouth; he could not articulate nor swallow anything; pulse not good, and his life seemed in danger.

The tongue was very tender to touch, but I could find no bogginess in any part of it. I took my scalpel and made an incision along the left lateral margin. A little blood came. I placed the scalpel a bit further back in the same line and incised a little deeper. Suddenly the blade of my scalpel slid into an abscess cavity, and out flowed most foul-smelling pus. I got the man to hang his head over the side of the bed, and pressed the tongue slightly. Matter flowed freely: about three wineglassfuls of pus. The man slept well that night, and made an uneventful recovery.

I think this was a case of idiopathic glossitis; at least I could find no local focus of infection. I think the case worth reporting, because, as far as I can ascertain, an abscess in the substance of the tongue is somewhat rare.

I took this to be an oedematous inflammatory condition of the tongue, and my intention was to try and relieve the condition by scarification. I did not expect to find pus.

SOME RECOLLECTIONS OF A CENTRO-
CONTINENTAL HOLIDAY.

By JOHN KNOTT, A.M., M.D., Ch.B. & D.P.H. (Univ, Dub.);
F.R.C.S.I.; M.R.C.P.I.; M.R.I.A.; &c.

THE present forcible closure of Central Europe to the tourist—as well as politician and pacific economist—of the circumferential nations inevitably tends to intensify the genuine interest of many of the associations of localities which cannot now be visited, and of the distinctive racial characteristics which cannot very well be scientifically investigated under the limitations of existing conditions. Then the study of historical geography has received a new impulse—one of which the momentum has never been paralleled in degree at any previous period of the annals of human progress. And the relatively very junior science of ethnology has been simultaneously subjected to a *vis à tergo* which must surely carry it over the heads of “the general,” and across the national barriers of all the civilised nations and their component races—in its circumterrestrial investigation of physical border limits, racial sources and migrations, climatic influences, ethnical antipathies, clerical prejudices, economical limitations, and political grasp and overreach—during the course of its panoramic inspection of contemporary conditions, and speculation regarding the probable future prospects of *Homo sapiens*. The dominant spirit of antipathy to our aggressive foe should not prevent us from endeavouring to make ourselves thoroughly familiar with his mental characteristics, and his physical weapons and methods. The investigation may seldom be edifying, but it can never fail to be instructive; and may often prove profitable—even in the spiritual as well as in the material sense. And it must make us better acquainted with not only the dangerous and detestable qualities and methods of enemies and unavoidable acquaintances, but also the too-long unfamiliar gifts and loveable dispositions of remotely placed and unstudied friends.

The innumerable conversational and journalistic discussions of the current European, or rather cosmopolitan, cataclysm must have had the effect of calling up some such reflections as (at least some of) the above, in most thinking minds, during the course of the recent months. They often

recall to my own memory some of the comparatively recent experiences, the recollection of which leads me at times to think myself specially fortunate in my opportunities for increasing the data of my limited personal knowledge, and of broadening the purview of my mental vision and speculative suggestion. Many of the written accounts of the communities of Central and Eastern Europe, although bulky to the eye and apparently broad—to a degree—in their presentations of facts, and suggestions of psychical and social illumination, will be found, when compared on the spot with the local observations of a perceptive visitor, to have left unbridgeable fissures in the areas of their mental map-making, and tinted with delusive shades the racial, social and domestic pictures which their authors had thought their duty—or proved their pleasure or profit—to prepare for the enlightenment of the home-tethered reader.

Such and similar reflections were brought vividly home to me during the autumn vacation season of the ante-bellum year of 1913. Readers will readily recall the fact that in the historic period of the Bismarck regime, Bad-Ems was the most conspicuously celebrated of all contemporary Health Resorts. It was favoured above all rivals by the annual resort of Bismarck's King-Emperor William, and Alexander, Autocrat of all the Russias; the emancipator of the serfs, of whom he endeavoured to make a balancing weight to readjust the equilibrium of the imperial machine, which was always kept in process of oscillating by the insolent encroachments of the boyars, and the labyrinthine intrigues of the bureaucracy. The decease of the German Emperor, and the assassination of the Russian despot, removed the luminaries which had so effectively brightened the atmosphere of their favourite resort. The inevitable result was a succession of lean years. So the Government thought it would be patriotic, as well as judiciously appropriate, to take over the gravitating concern, furnish it with every item of up-to-date machinery, and adopt all the other means necessary to enlighten a short-sighted public on the subject of the sterling value of the famous Imperial Kur-Resort—its atmosphere, its waters, and their saline constituents. The local preparations having been duly carried out, with all the characteristic "German thoroughness," a London Agency was established under the very appropriate management of a German Jew.

Inquiries were then made behind the scenes, with the object of finding a competent expert, qualified to examine and draw up a skilled report on the features of the Bad-Ems (climatic, geographical, geological, and meteorological) and the qualities of its waters (physical, chemical, medicinal, and gustatory). I shall not now attempt to conceal the fact that I felt very much gratified on receiving the communication which informed me that I was the person selected, after an inquiry of which I had known nothing—and in the heart of the great metropolis where so many hundreds of very competent candidates were daily discoverable; and only too voluntarily available without suspicion of commandeering, or even monetary remuneration. So I set out in unusually good spirits for Bad-Ems, with all expenses pre-arranged, and the inspiring prospect of truly Imperial treatment at the hands of my patrons and all local patriots, who were inevitably all too anxious to favour in every way in their power the resuscitation of the well-deserved fame of the leading Bismarckian Kur-Resort. And the auspicious aspect of this opening was thoroughly maintained throughout the period of my last ante-bellum visitation to the heart of the now chaotic Continent. The atmospheric conditions were as approximately ideal as such conditions can reasonably be even hoped for in the regiment of matters terrestrial; the boat and rail service were so arranged as to conduct me almost without interruption from Dublin to Bad-Ems; and the train arrived at the station which supervises the latter (from exactly the right level for panoramic appreciation) at the most appropriate evening hour for an initial survey of a scene of illumination and reflection which suggested recollections traceable to early perusal of the "Thousand and One Nights," and first boyish view of a Cinderella pantomime—the underlying valley looking as if specially illuminated in anticipation of a formal visit from the twentieth-century Cæsar. The artificially picturesque was there grafted on the naturally scenic in a way which has left that first view of the famous Resort a permanent, as well as unique, picture in the mental gallery of at least one visitor. And the hotel reception was, of course, made up to match; all attentions and every luxury, as well as necessity, combined to impose so far as possible the self-deception of a transitory Imperial importance—and were continuously maintained during my mensual sojourn.

The following morning was ushered in with the calmly brilliant radiance which so well suits the geography and scenery of the locality. A sauntering stroll along the single street of the more business-y portion of the town, which runs parallel to the river that occupies the median groove of the valley, brought vividly to my mind recollections of my first perusal of *Rasselas*. The *mise-en-scène* was perfect in its idealistic presentation of the material which Nature had so generously provided. Although a native of one of the most verdant localities of the Emerald-Isle itself, I must admit—even though the confession may savour slightly of defective patriotism—that I have never seen anything in the same line that quite equalled the riotous luxuriance of the Bad-Ems foliage, and the chromatic richness of its appropriate tints. And the position readily presented the key of the local botanical problem to every observant inquirer who happened to be supplied with some natural powers of observation, and even a very moderate quantum of physical and meteorological data. The direction of this “happy valley” was approximately due East-to-West: I did not consult a compass—or even a local living oracle on this question; but I saw the morning sun always opposite one extremity of this geological depression, and never failed to watch—with something savouring of almost romantic enjoyment—the disappearance of the diurnal luminary behind the very picturesque mountain ridge which cross-barred the opposite end of the same. On either side the hills rose steeply—more nearly approaching the perpendicular, indeed, than we usually find moderately elevated and richly wooded mountains of the lower grade. The one “street” of houses was arranged close to the foot of the overhanging rock-strata, from or beneath which issued most of the sources. It was the focal gathering of the hotels and the sanatoriums and the resident *Aerzte*, and consequently of the shops and refreshment rooms. An exquisitely kept pleasure-ground promenade was one of the leading features, liberally furnished with seats; and, in the section facing my own and the other principal hotels, those items of luxuriant restfulness were found to have blossomed out into lounge-chairs of every delectable form and pattern. Towards the sun-rising was the well-built bridge which conveyed foot-passengers across the apparently unmoving waters of the lake-like Lahn, on the other side of which were the evidently principal residential

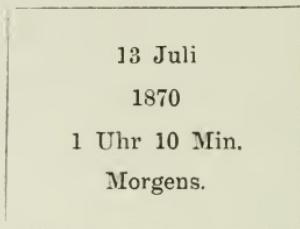
houses; and one most skilfully engineered and richly furnished pump-room—beneath which the waters had (very obviously) necessitated the expenditure of “some” expert subterranean exploration. Handy steam-launches ran backwards and forwards all day along the course of the Lahn; but I saw little if anything to invite excursions—thus further emphasising the suggested parallelism of the associations of the beatific abode of the Prince of Abyssinia. The only physical connections of our “happy valley,” in the least suggestive of easy emergence were: the central stream, which looked far too quiet for even the mildest suggestion of active transit, and the super-imposed railway which merged into the open on the least picturesque portion of our surroundings. Air-currents—of notable vigour—would seem to be more effectively barred out than from most of the more eligible of the residential areas of the earth’s surface; and this fact, combined with the too obvious laziness of the waters of the (comparatively) wide central stream, tended to give (to at least one visitor) a feeling of figurative supersaturation of the circumambient atmosphere, which would go a long way towards explaining the restlessness of Rasselas and his friends in that delectable residence wherein the only want that could be definitely formulated, even with the subtlest aid of metaphysical logic, was that the inhabitant *wanted nothing*. This feature was also a little further emphasised by the fact that the waters of the central (apparently unmoving) stream, although not odorous, conveyed towards mid-day an olfactory heaviness which was somewhat suggestive of defective sanitation. I soon ascertained that this was due to the fact that the collective exit of the sewerage was rather near the line of emergence of the Lahn from the limits of the Ems village. Of the most distinctive artificial features of the locality, one was—inevitably—the great Bad-haus; another was the little Greek Church which Alexander of Russia had built for the use of himself and his retinue during his annual visit. To the former he added a special bath-room for his own daily use. The now unused “Orthodox” house of worship stands in sacred isolation on the side of the river opposite the *Russische Hof*, and was kept with religiously scrupulous care at the time of my stay there. (It would be interesting to ascertain whether the present degenerate Deutschlanders regard it with the same respect!)

In the present unprecedented position of European—and cosmopolitan—antipathies and international destructiveness, everything that throws a special light on the ways and methods of our previously little-known or much-misunderstood allies on the other side of the Vistula should surely have an added interest for all inquiring readers. And my personal visit to Bad-Ems then threw a couple of what I thought peculiarly illuminating search-light beams on the personalities and social peculiarities of the present representatives of the Autocratic House of Romanoff. I had the privilege, as I rated it, of being waited on in my Hotel by the bright German youth of 20—who during the off-season of each of the previous three years had functioned as personal valet to the Grand Ducal brother of the reigning Tsar; who had resigned all his sovereign (and residential) claims on the crown and country of his birth, to live in happy married exile with the life-partner of his choice. Needless to say, that I utilised the opportunity of obtaining original first-hand information on a subject of such rare human interest. And the result was as edifying as it was rather unanticipated. Never can I forget the radiant glow of devoted and gratified affection which beamed from the bright features of that unusually social German lad whenever I gave him an opportunity of discussing his Grand Ducal master, and the truly honest pride with which he showed the photograph presented him with a thoroughly *friendly autograph* inscription—the handwriting of the man who had very voluntarily resigned the presumptive heirship to the autocracy of the vastest of Empires; and the corresponding display of grateful affection and emotional pride with which he exhibited a gold watch with a similar engraved inscription: the gift of the same hand. So much so, indeed, that I could not help thinking for the moment that autocracy might not, after all, be quite so scorching a material to handle as I had often been told!

Then, having a free pass everywhere, I availed myself of the luxurious hygienic material and methods of the Badhaus daily during my sojourn. Having been shown the Alexandrine bath, I asked to be allowed to utilise it exclusively, and my request was freely granted. There I carefully endeavoured to ascertain the data and quality of the traditional reputation which had locally adhered to the memory of the self-willed representative of the most absolute

of all despotic governments—the most ruthless of all recorded forms of concentrated and uncompromising tyranny as our journalistic apostles had been actively teaching their disciples. The opportunity was most auspicious. During the weeks of my Ems residence, I had the privilege of bathing every day in the bath which the late Tsar had constructed for his own use, and of being massaged on his couch. The Badmeister who officiated in this function told me that his predecessor, with whom he had long been on intimate terms, and who had waited on the Autocrat of all the Russias, had died but two years previously. I greedily hastened to inquire what was the personal impression that had been made by the Imperial patient on his humble German masseur. And never shall I forget the glow of brightness and obviously transmitted gratitude—and even devotion—which the question brought to the face of my attendant. (It reminded me quite forcibly, too, of the effect on my hotel waiter of a reference to his Grand Ducal master.) His ready reply came, most unmistakeably, direct from the heart: “Ah, he praised him greatly! What he always used to say to him, when he came here for the season was: ‘Now don’t mind me more than anybody else who comes here, I don’t want to make any fuss.’” And I could not help thinking all to myself how different a tune he would have been made to dance to under corresponding conditions of employment by a third-rate office-holder—to say nothing of an equestrian dignitary—or ninth-rate member of one of the learned professions; even of our own liberal-minded and liberty-seeking Irish metropolis! Indeed, I feel bound in dutiful candour to confess that, for the moment, I felt my own philosophic and whole-hearted liberalism backsiding so tangibly as to permit the unspoken suggestion to loom over the mental horizon: that autocracy might possibly, under occasional conditions, produce certain results that would tend to neutralise many of the inconveniences from which no existing or recorded political or social system has hitherto proved itself wholly free. And, although a social trend in such direction has become wholly unthinkable in an age of Labour cabinet ministers and screeching suffragettes, I have felt in duty bound to place on record an authentic and instructive item of enlightenment regarding a generally unrecognised quality of a series of representatives of the most autocratic of contemporary despotisms.

Another very interesting association of Bad-Ems which recalls some of its most significant memories—both medical and political—is indicated by a small inscribed stone placed on the margin of a little fuchsia-bordered flower-bed—in a wholly unobtrusive position by the public promenade. Although continuously on the look-out for anything and everything remarkable, I had failed to notice the inscription or its surroundings till my Badmeister called my attention to its existence. The following is a full copy, arranged as in the original:



Nothing there very suggestive of either inspiration or excitement, literary or political, surely! Yet that spot, and that minute witnessed the turning over of a new leaf in the history of Europe, and of the world. For there and then it was that Benedetti, the French Ambassador, walked up to Bismarck's Wilhelm of Prussia, and drawing from his pocket a parchment document with an air more suggestive of disdainful "swank" than of the dignified courtesy of the ordinary recognised courtly practice, asked the aged monarch if the contained statement was really true. The Prussian King had been toddling along, and periodically sipping—in the regulation Bad-Ems style—with his half-emptied glass of the curative water in his hand, and his attendant physician by his side. Bismarck had been gradually screwing up the connecting cords of Franco-Prussian international relations to their required condition of unendurable tension, while France—and its Emperor and its ambassador—had remained in scornfully contemptuous apathy—or, at least, non-preparation. The descendants (and more especially their political and military representatives) of the conquerors of Jena could then hardly take Prussian antagonism even half seriously. And the silly and un-courtier-like insolence of the French Ambassador gave Bismarck the very excuse he had prayed and

waited for. On the afternoon of that day, the reserves were being swept up from every hole and corner of Prussia!

Bad-Ems has indeed many attractions—during a brief sojourn. The waters have many excellent qualities, and when the administration is skilfully supervised (as it always must be there), they can be made beneficial in various and widely-divergent groups of cases. The scenic surroundings are æsthetically delightful, and the whole position has been so exquisitely outlined by Nature, to delight the eye and to cheer the heart, that it can well challenge comparison with any other that can readily be mentioned. The locality itself presents many features of special interest to the geologist, mineralogist, botanist and historian—as well as to the invalid and his physician. The exquisitely-wooded hill fence of one side of the valley presents the excursionial attraction of a climbing funicular railway—more nearly vertical than any considerable one that I have had an opportunity of ascending, except the *right* undeviation of that of the Eiffel tower itself. The parallel ridge on the other side of the Ems depression is chiefly distinguished by a lofty national monument to the successful issue of the war, which—according to the patriotic native—was precipitated by the swaggering *gaucherie* of the French Ambassador on the occasion above referred to.

As the holiday excursion, with its concurrent investigation, approached the time limit, the superficial reader of the above paragraphs, if such exists, may possibly incline to guess that I felt some regret at the approaching prospect of severance from so many æsthetic and (scientifically and historically) interesting associations. But there was nothing of the kind. My “ happy valley ” had generated a feeling which made me sympathise with the apparently uncalled-for restlessness of Rasselas in his. A feeling of confinement—even oppression—had gradually developed. I had come to long for more energetic air-currents : they seemed very necessary to change the invisible materials of the circumambient atmosphere, which gave a feeling suggestive of supersaturation with vegetable emanations. So I gladly prepared for my exit ; I left Bad-Ems without a sigh ; and, although I will always recall memories of the experience with very peculiar pleasure, I feel no special desire to see the locality ever again.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—R. D. PUREFOY, M.D., F.R.C.S.I.

General Secretary—J. A. SCOTT, M.D., F.R.C.S.I.

SECTION OF OBSTETRICS.

President—GIBBON FITZGIBBON, M.D., F.R.C.P.I.

Secretary—B. SOLOMONS, M.D., F.R.C.P.I.

Friday, November 10, 1916.

Endothelioma of Ovary.

THE PRESIDENT OF THE ACADEMY showed a specimen of this condition, with the following history. The patient from whom the growth was removed had sought the advice of Dr. Ashe, because, though only 36 years of age, menstruation had been absent for nearly a year without any evidence of pregnancy or of any manifest disturbance of general health. Her first and only child was born seven years ago. Pelvic examination revealed no evidence of uterine disease. The right ovary was enlarged to the size of a walnut, though not very sensitive to touch; the left was manifestly smaller than normal. Though there was no complaint of pain, the removal of the right ovary was advised, and easily effected, followed by an easy convalescence. Its appearance, except that its surface was very pale, did not arouse suspicion, but under the microscope the characteristics of endothelioma are plain. The President expressed the hope that in discussing the specimen those present would favour him with their views on the wisdom, or otherwise, of removing both ovaries; and, secondly, whether extension or recurrence was likely to occur.

DR. ROWLETTE.—On cutting the ovary across, more than half its substance was found to be a soft, homogeneous,

friable tumour, which approached closely to the peritoneal capsule, but did not appear to infiltrate it. Microscopically, this tissue was seen to be composed of large, flat, irregular, endothelial cells; in many places they were grouped around open lymph-clefts. The tumour is certainly irregular, and is to be classed as an endothelioma.

SIR WILLIAM SMYLY said they must remember that having heard that the tumour of the ovary was an endothelioma, the case presented itself to them in a different light from what it appeared to the operator, who did not suspect that it was malignant. And under such circumstances, and considering the age of the patient, he thought he was fully justified in leaving the second ovary.

Uterus removed because of Obstetrical Rupture.

THE PRESIDENT OF THE ACADEMY also showed the body of the uterus, removed by abdominal hysterectomy from a parturient woman shortly after rupture had occurred. She was a young 3-para, having a history of difficulty in former labours owing to slight pelvic narrowing. Soon after admission a brow presentation was diagnosed. This was converted into a vertex, and the presenting part had nearly reached the outlet when signs and symptoms of ruptured uterus became manifest. On making abdominal section, the foetal body and extremities came into view, having escaped through a large, irregular rent involving the anterior vaginal fornix and lower uterine segment. In the presence of such conditions the immediate question to decide is, after a rapid extraction of the foetus, whether to repair or to remove the uterus. The former plan he regards as a counsel of perfection, to be kept steadily in view, and to be carried out if the patient's condition warrants the attempt. In the present instance, removal seemed the wiser course, and it was concluded with all possible speed. Convalescence has been slow, but seems likely to be quite satisfactory.

DR. HASTINGS TWEEDY said that he had, through the kindness of Dr. Purefoy, an opportunity of seeing his patient and helping at the operation. Tears such as this one, he believed, were always due to some previous tearing of the cervix, and the commonest cause of such a tear was the application of forceps before the os was fully open. When

once the cervix was torn it was an easy matter to have an extension of the rent, though an interval of years might elapse between the primary and secondary ruptures. In respect to treatment, he believed that better results all round are obtained by means of a plug than through abdominal section. The plug had two objects in view:—(1) To stop immediate bleeding; and (2) to counteract shock by preventing prolapse of the intestinal contents and the entrance of air or micro-organisms through the vagina. Very few people understood how to apply a plug. At one autopsy he had observed a ribbon of iodoform gauze pushed up to the surface of the liver. This, he need hardly say, did more harm than good. A large piece of gauze should be bunched in the hand, as a housemaid bunches a duster, and this large mass should be pushed into the rent, but not through it. In this way haemorrhage is controlled, and the intestinal contents are prevented from prolapsing. It is a misnomer to talk about immediate abdominal section for rupture of the uterus. In the majority of instances it takes over an hour from the time operation is decided upon to its actual accomplishment.

SIR WILLIAM SMYLY said that the cause of the rupture in this case was obscure. But in a large proportion of cases of malpresentation of the head it was held in its faulty attitude by the lower uterine segment, and for that reason attempts at rectification were necessarily attended with risk.

Tuberculosis of the Genital Organs transmitted from Husband to Wife.

DR. SPENCER SHEILL read a paper on this subject. [It was published in the number of this Journal for February, page 81.] The husband was definitely tubercular in seminal vesicle, epididymis and kidney. Five weeks after marriage his previously healthy wife complained of swollen glands in the groin; she had tender and thickened uterine appendages on the same side, and reacted to tuberculin tests. A course of tuberculin injections made an apparently complete cure.

SIR WILLIAM SMYLY said that the case was one of very great interest, and suggestive of the possibilities of direct infection of the wife's genitalia by tubercular semen. He was, however, still unconvinced that the uterus and tubes could be infected in that way. Unlike the respiratory and

alimentary organs, the current in the genital canals was in an outward direction, and tended to eliminate the bacilli; nor did it seem possible that they could be carried upwards by spermatozoa. He believed that tuberculosis of the tubes and uterus was never found as a primary disease, but was always secondary to some focus of infection elsewhere, and generally carried to the organs named by the blood.

DR. TWEEDY said tuberculosis required a month or more rest before being active, but it was known that guinea-pigs injected could show tuberculosis in so short a period as three weeks. Tuberculosis was not unknown as a primary ulceration of the cervix; therefore, why should not this occur by coitus?

DR. SHEILL said, in reply, that he did not agree with Sir William Smyly that tuberculosis had no tendency to ascend the female generative organs like the gonococci. There was no more evidence to prove Sir William Smyly's theory than there was evidence to prove that tuberculosis could not be communicated by coitus.

Friday, December 8, 1916.

Exhibits.

DR. ALFRED SMITH showed—(1) a uterus, with appendages, which he had removed from a patient aged 27, the mother of six full-term children, the last three months ago. She consulted him for haemorrhage, which was continuous for the past fourteen days. Odour foetid. A large quantity of débris was curetted out of the uterus. The opinion that the uterus was malignant justified immediate operation. The patient said her last labour was normal in every way; no haemorrhage.

DR. SMITH also showed a large mass of adeno-carcinomatous tissue which he had removed from the peritoneal surface of the recti muscles; also two large nodules removed from the omentum. The patient from which the tumours were removed was aged 43. She consulted him for haemorrhage without foetus. Examination under ether gave the impression that the tumour felt was an ordinary fibro-myoma of the uterus. Operation revealed

no connection whatever with the uterus. The uterus and ovaries appeared normal to view. The patient looks and feels well.

DR. T. T. O'FARRELL gave the following account of the specimens :—

1. *Tuberculosis of the Uterus and Appendages.*—Naked eye appearance : Several miliary tubercles were present upon the peritoneal covering of the uterus, also on the left broad ligament adjacent to the ovary. Both tubes were slightly enlarged, and contained caseous material, the tubercular condition being more marked in the left tube. Both ovaries were slightly cystic; the larger, the left one, being the size of a large walnut.

The uterine mucous membrane was somewhat ragged and haemorrhagic, but showed no naked-eye evidence of tubercle.

Microscopical sections taken through the entire substance of the uterine wall showed typical giant-cell systems beneath the peritoneum, in the muscle wall, and between the tubules of the uterine mucous membrane.

Giant-cell systems and caseation were also found in sections through the left Fallopian tube.

2. *Tumours from the Abdominal Wall and Omentum.*—Three tumours presented the following characters :—

(a) the largest, measuring $12 \times 8 \times 4$ cm., was a somewhat flattened, irregular, nodulated and solid mass, without any definite capsule. One flattened surface was covered by peritoneum, to the edges of which were attached some shreds of omental fat. The cut surface of the tumour presented the appearance of a cirrhouss cancer.

(b) The second tumour mass measured $9 \times 5 \times 3.5$ cm., and showed much the same appearance as the first specimen.

(c) The third and smallest neoplasm was about the size of a walnut, and was embedded in omental fat.

Microscopically the tumours were similar—viz., they consisted of acini lined by cubical or flattened columnar epithelium embedded in a fibrous tissue resembling a fibro-adenoma of the breast. In places, however, the epithelium assumed a distinctly malignant character of adeno-carcinoma. The malignant appearance was most marked in the small tumour from the omentum, where an encephaloid type of carcinoma was present.

He (Dr. O'Farrell) said he regarded the tumours as being

secondary deposits from the ovary, uterus, or possibly the intestine, though there was no clinical evidence of the existence of any primary tumour in these organs.

SIR WILLIAM SMYLY said he thought it would be more correct to say that tuberculosis of the uterus was rarely diagnosticated than that it was of infrequent occurrence. Dr. Jellett and Dr. Rowlette had made investigations in this direction, and he thought the result of their work proved that it was a disease of comparative frequency. Dr. Smith's specimen showed more serious pathological changes than were often met with, and justified its radical treatment; but, as a rule, he (Sir W. Smyly) did not think it necessary or advisable to remove a uterus because it was tubercular. It was invariably a secondary focus, and unlike the same disease in the Fallopian tubes, did not tend to suppurate or caseate.

DR. SOLOMONS said that if all the uteri were removed from patients who had had the tubes resected for tubercular salpingitis, he was sure a great number would be found to be tubercular. The case reported was very evidently tubercular endometritis, secondary to tubal disease. He thought it most likely that the tubercular lesion had been present for many years in a mild degree, and that the last pregnancy had caused an exacerbation of the disease.

THE PRESIDENT said it was particularly interesting to find a uterus so extensively tubercular in a woman who had had six pregnancies, and the last of which was only three and a half months previous to operation. The balance of opinion appeared to be against the removal of the uterus for tubercular disease, but when the tubes were extensively diseased and had to be removed on account of symptoms due to effects of the tubal trouble, he thought, if the uterus also showed tubercular lesions, it would be a reasonable precaution to remove it and extirpate an obvious lesion. The second specimen appeared to be secondary growths, and he thought they very probably originated from the ovary.

Note on Fibroids and Pregnancy.

DR. BETHEL SOLOMONS read a paper in which he concluded that—

1. When myoma causes sterility it is usually submucous

in variety, but myoma is one of the least common causes of sterility.

2. When performing myomectomy with pregnancy in view, if the edges of the wound are approximated carefully with iodine catgut and closed with a continuous button-hole suture, the confinement may be approached with confidence.

3. After myomata are removed during pregnancy, miscarriage is a common outcome. When multiple fibroids complicate pregnancy, hysterectomy is usually necessary.

He reported an interesting case where hysterectomy was necessary in a three months' pregnant uterus. [Dr. Solomons' paper appeared in full in the February number of the Journal, page 96.]

SIR WILLIAM SMYLY said that it was generally believed that myomata caused sterility, and though that belief was probably correct, yet, so far as he knew, there were no statistics to prove it. The disease usually occurred at a time when women were less fruitful than earlier in life, and, therefore, it would not be sufficient to show that women with myomata were below the average in fertility. As regards operating during pregnancy, it should, and generally could, be postponed if possible until after delivery. But during the past year he had been obliged, on account of excessive pain, to enucleate a tumour as large as a billiard ball at the sixth month, and the patient subsequently went to full term, and was confined in the Rotunda Hospital.

DR. ALFRED SMITH said one of the many interesting points raised in Dr. Solomons' paper was whether fibroids caused sterility. Fibroids undoubtedly have some influence in causing sterility, but not so much as is generally supposed. Operations during pregnancy had no terrors for him if the proper time was selected—*i.e.*, the time of the month corresponding to the mid-menstrual period, as the uterus is then less irritable. He recalled a case of a sixth months' pregnancy where he had to perform a hysterectomy owing to distress from the pressure of a large fibro-myoma.

DR. SPENCER SHEILL considered that great care should be taken in explaining to women the results which followed hysterectomy.

THE PRESIDENT said that obviously myomectomy was the proper operation when fibroids were found complicating

pregnancy and causing symptoms necessitating interference, or where they were so situated as to render the probability of delivery at term doubtful. But when the fibroids were multiple and intramural, there was always the risk that the evacuation would leave the uterus in so mutilated a condition as to render its retention unjustifiable, and then hysterectomy was the only alternative. The point must be left to the judgment of the operator at the time of operation.

SIR ANDREW HORNE and DR. TWEEDY also spoke.

DR. SOLOMONS agreed that it was most important that patients, whether in a general hospital or in a private home, should be told most carefully the after-effects of operations which involved the removal of important organs. In the case mentioned in his paper the woman and her husband understood all the possibilities, and were most anxious to leave the treatment to him (Dr. Solomons). He did not think that multiple myoma contraindicated myomectomy. Sometimes the removal of one myoma was more difficult than of many. He thought that operations during pregnancy were undesirable unless when necessitated by exigency.

Friday, February 2, 1917.

Papillomata of both Ovaries.

SIR WILLIAM SMYLY showed a remarkable pathological specimen, consisting of a uterus with an extensive cervical laceration, a large fibroid of the broad ligament, and papillomata of both ovaries. The woman was fat, and it was difficult to make an accurate diagnosis.

Continuous Sponges.

SIR WILLIAM SMYLY read a paper on this subject. [It is published in full at page 165.]

DR. NEILL suggested that the sponges might be contained in pockets attached to the Kocher's sheet.

DR. MADILL said that, while he saw the good points of the routine, he had been unfortunate on the only occasion in which he had used the sponges. The case was one of pus tubes, where a great amount of sponging was required, and in manipulating the bag the entire sponge tumbled out; this he attributed to the want of practice of his assistant.

DR. ALFRED SMITH was quite familiar with the literature on the uses and the advantages of the continuous sponges claimed by American operators. He saw the good points in the technique, and would try it should opportunity arise. He was satisfied with the security given by the "check" adopted in the Gynaecological Department of St. Vincent's Hospital, where the operator controlled the entire "team." Sponges in bundles of ten are counted under his observation, in an audible tone, from the bundle to the receiving basin. Before closing the abdomen all sponges are again counted, and hung upon a wooden horse provided for the purpose.

DR. BETHEL SOLOMONS said that while he had never had any mishaps with the single-sponge method, having seen the continuous sponges in operations under Sir William Smyly's guidance, he was extraordinarily struck by the benefits of the technique. He saw the slight disadvantages that might be present when working in different private homes or with different assistants. He thought that in minor laparotomies they might be extravagant, but the advantages were so much greater than the disadvantages that he intended to commence using them immediately.

DR. R. WHITE considered that there would be difficulty in teaching the assistant to use the sponges correctly, and that there was a great danger of infecting the unused portion.

DR. SHEILL remarked that it would be a simple matter to so design the bag and to so fold the continuous sponge that it would be quite impossible to accidentally pluck out the whole of it at one time. He suggested a bag triangular in section with the apex as the opening.

THE PRESIDENT said there was always the fallibility of a count, and in difficult pus cases, where sponges are used rapidly, the risk is greatest, and the count cannot be checked by the operator. He (the President) had tried the continuous sponge in one case, which, unfortunately, was a difficult one, and he found the method inconvenient at first, but quite recognised that the trouble was due to the fact that it was a trial. He thought the continuous sponge was an advance in operation methods, and was the way in which the risk of leaving sponges in the abdomen could be completely guarded against. He thought, therefore, that it should be given a prolonged trial.

Early Operative Interference in Acutely Septic Pus Tubes.

DR. HASTINGS TWEEDY read a paper advocating this. He said it was now possible to isolate the tubes and uterus from the general abdominal cavity, so as to prevent dissemination of septic pus from the tubes, which usually burst during their removal. In these cases the ovaries should not be sacrificed, and any portion of the tube which remained apparently healthy should be left. The contaminated area, which was sure to be present after such operation, should be plugged with a large quantity of iodoform gauze, and in this way the area of infection could be cut off from the general peritoneal cavity. The end of the gauze is best brought through the lower abdominal wound, and a glass drainage tube should be inserted beside it. Gauze by itself made a very imperfect drain, and this was one of the reasons why he preferred to bring it out through the abdominal wound rather than to force it into the vagina. The adhesive wall which formed round the iodoform gauze arose from aseptic irritation, and would most certainly be reabsorbed in process of time. He passes through the Fallopian tube stumps a strand of catgut, so as to keep their mouths open until septic conditions had disappeared.

DR. ALFRED SMITH thought the term "modern" should not be applied to the technique employed. Howard Kelly, in his "Operative Gynaecology," published in 1889, describes a procedure identical with the one employed by Dr. Tweedy; and Dr. Jellett illustrates in his last "Practice of Gynaecology" the typical operation which is followed by leading gynaecologists. Acute pus tubes had better be treated palliatively until the contents became sterile. A practical way to determine the safest time to operate was to put the patient under ether, to make a bimanual examination and test the mobility of the tubes. If no rise of temperature followed this manipulation the tube contents were deemed sterile, and operation was recommended.

DR. WHITE said that he did not approve of leaving the end of an acutely infected tube discharging pus into a non-infected peritoneum.

DR. BETHEL SOLOMONS said it would be interesting to know the previous history of the cases mentioned by Dr. Tweedy. It seemed to him that these were cases either of chronic pyosalpinx

or of acute exacerbations of chronic pyosalpinx. He thought that the case extensively quoted, if further examined into, would prove to have a previous gonorrhœal history. He asked if Dr. Tweedy would perform laparotomy and salpingectomy in a case diagnosed as acute pyosalpinx soon after labour. He found drainage through the posterior fornix most satisfactory in some cases, and it led to a better wound result. In very severe cases, drainage through the abdomen and vagina was most effective.

DR. DOBBIN CRAWFORD mentioned that she had heard Mr. Bonney express the opinion that operations for acute pyosalpinx are as urgent as those for acute appendix.

DR. GIBSON agreed that free drainage should be provided in cases of acute salpingitis with severe symptoms. He asked why Dr. Tweedy advised partial removal of acutely infected tubes.

THE PRESIDENT thought Dr. Tweedy should define exactly what he meant by acute pyosalpinx. There appeared to be a tendency to take the term as meaning acute septic infection of the tubes. He (the President) thought that the cases dealt with were only cases of pyosalpinx, in which the pus was still infectious, and in which a recrudescence of acute symptoms had developed; probably through leaking into the peritoneum. He thought the modern tendency was to remove a pyosalpinx when it had formed, and this certainly was the practice he adopted. The question whether the pus was active or sterile was settled afterwards, and did not influence the time or character of the operation. He also thought the tendency was to deal as conservatively as possible with the uterine appendages. If the case was one of pus tubes alone, they alone need be removed; if it was one of tubo-ovarian abscess, the ovary must be taken away.

DRS. GOULDING and MADILL also spoke, and DR. TWEEDY replied.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, January 27, 1917.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended Saturday, January 27, 1917, in the Dublin Registration Area and the eighteen principal provincial Urban Districts of Ireland was 22.8 per 1,000 of the aggregate population, which for the purposes of these returns is estimated at 1,127,268. The deaths from all causes registered in the week ended Saturday, January 27, and during the period of four weeks ended on that date, respectively, were equal to the following annual rates per 1,000 of the population :—Nineteen Town Districts, 22.8 and 22.0; Dublin Registration Area, 22.7 and 23.6; Dublin City, 24.3 and 23.6; Belfast, 22.4 and 20.4; Cork, 25.8 and 23.8; Londonderry, 16.7 and 20.2; Limerick, 23.0 and 23.0; and Waterford, 22.8 and 22.8.

The deaths from certain epidemic diseases—namely, enteric fever, typhus, small-pox, measles, scarlet fever, whooping-cough, diphtheria, dysentery, and diarrhoeal diseases—registered in the nineteen Town Districts during the week ended Saturday, January 27, 1917, were equal to an annual rate of 0.9 per 1,000. Among the 169 deaths from all causes in Belfast were 3 from measles, 1 from whooping-cough, and 5 from diarrhoeal disease. Among 38 deaths recorded in Cork was 1 from whooping-cough; and of 9 deaths recorded in Tralee 1 was from diphtheria.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock and Kingstown. The population of the Area is 399,000.

In the Dublin Registration Area the births registered during the week ended January 27, 1917, amounted to 169—78 boys and 91 girls, and the deaths to 186—87 males and 99 females.

DEATHS.

The deaths registered, omitting the deaths (numbering 12) of persons admitted into public institutions from localities outside the Area, represent an annual rate of mortality of 22.7 per 1,000 of the population. During the four weeks ended with Saturday, January 27, the death-rate averaged 23.6, and was 1.6 below the mean rate for the corresponding portions of the ten years, 1907-16. The rate for all deaths registered during the four weeks was 25.3, while in the corresponding period of the preceding ten years it had been 26.5.

The 176 deaths appertaining to the Area included 3 from measles, 1 from whooping-cough, 1 from diphtheria, and 3 from diarrhoeal diseases—all of children under two years old. In the three preceding weeks deaths from measles had numbered 3, 3 and 3; deaths from whooping-cough, 0, 0 and 1; deaths from diphtheria, 0, 0 and 1; and deaths from diarrhoeal diseases, 4, 1 and 1 respectively.

Tuberculosis caused 26 deaths, as against 29, 20 and 20, respectively, in the three weeks preceding. Of the 26 deaths ascribed to tuberculosis, 24 were referred to pulmonary tuberculosis, 1 to tubercular meningitis, and 1 to disseminated tuberculosis.

Six deaths were caused by cancer, 12 by pneumonia (6 by broncho-pneumonia, 1 from lobar pneumonia, and 5 by pneumonia, type not distinguished), 20 by organic diseases of the heart, and 27 by bronchitis.

Five deaths were caused by burns (4 of these deaths being of children under 5 years).

Among deaths of infants under one year old, 4 were ascribed to convulsions, 11 to congenital debility, 1 to congenital malformation, and 3 to premature birth. Forty-nine of the deaths registered during the week appertaining to the Area were of children under 5 years of age, 31 being infants under one year, of whom 10 were under one month old. Forty-four deaths of persons aged 65 or upwards were registered, including 30 deaths of persons of 70 years or upwards.

Of the 176 deaths recorded, 74 occurred in hospitals and other public institutions.

STATE OF INFECTIOUS DISEASES.

The following returns of the number of cases of Infectious Diseases notified under the "Infectious Disease (Notification)

Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," have been furnished by the respective sanitary authorities:—

TABLE I.—SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area—(viz., the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock and Kingstown), and in the Cities of Belfast, Cork, Londonderry, Limerick, and Waterford, during the week ended January 27, 1917, and in each of the preceding three weeks.

A dash (—) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Measles	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Diarrhoeal Diseases	Poliomyelitis	Pulmonary Tuberculosis	Total
City of Dublin	Jan. 6	—	6	—	—	—	—	—	—	1	—	—	—	—	—	7	20
	Jan. 13	—	4	—	—	—	—	—	—	—	—	—	—	—	—	8	17
	Jan. 20	—	2	—	—	—	—	—	—	—	—	—	—	—	—	8	16
	Jan. 27	—	2	—	—	—	—	—	—	—	—	—	—	—	—	9	15
Rathmines and Rathgar Urban District	Jan. 6	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 13	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	2
	Jan. 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 27	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	6
Pembroke Urban District	Jan. 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Blackrock Urban District	Jan. 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 27	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Kingstown Urban District	Jan. 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 27	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1
City of Belfast	Jan. 6	—	6	—	—	—	—	5	—	—	1	4	—	—	—	2	18
	Jan. 13	—	9	—	—	—	—	2	—	—	3	2	—	—	—	2	18
	Jan. 20	—	12	—	—	—	—	5	—	—	2	2	—	—	—	1	22
	Jan. 27	—	13	—	—	—	—	5	—	—	2	1	—	—	—	3	24
City of Cork	Jan. 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	Jan. 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	Jan. 20	—	1	—	—	—	—	1	—	—	1	1	—	—	—	—	2
	Jan. 27	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1
City of London- derry	Jan. 6	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	4
	Jan. 13	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	3
	Jan. 20	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	5
	Jan. 27	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	3
City of Limerick	Jan. 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 13	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1b
	Jan. 27	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1b
City of Waterford	Jan. 6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 13	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Jan. 20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Jan. 27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1

^a Continued Fever.

^b Not including one case of rubella or epidemic rose rash.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Table II. exhibits the number of cases of certain infectious diseases treated in the Dublin Hospitals during the week ended January 27, 1917, and the number under treatment at the close of each of the three preceding weeks.

TABLE II.

Diseases	No. of Cases in Hospital at close of week ended			Week ended January 27				No. under treat- ment at close of week
	Jan. 6	Jan. 13	Jan. 20	No. admitted	Dis- charged	Died		
Enteric Fever	24	20	23	5	4	—	—	24
Typhus	—	—	—	—	—	—	—	—
Small-pox	—	—	—	—	—	—	—	—
Measles	—	20	26	30	9	5	1	33
Scarlet Fever	55	55	49	5	7	—	—	47*
Diphtheria	—	13	13	8	5	1	1	11
Pneumonia	—	29	29	23	7	6	2	22

* Exclusive of 12 convalescent patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

From this Table it appears that the cases admitted to hospital during the week ended January 27, and the cases under treatment at its close, respectively, were as follow:— Enteric fever 5 and 24; measles 9 and 33; scarlet fever 5 and 47 (exclusive of 12 convalescents at Beneavin, the Convalescent Home of Cork Street Hospital); and diphtheria 5 and 11. Seven cases of pneumonia were admitted during the week, and 22 remained under treatment at its close. Of the deaths in hospitals during the week 1 was from measles, 1 was from diphtheria, and 2 were from pneumonia.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, January 27, in 96 large English towns (including London, in which the rate was 18.4), was equal to an average annual death-rate of 17.0 per 1,000 persons living. The average rate for 16 principal towns of Scotland was 16.9 per 1,000, the rate for Glasgow being 16.6, and that for Edinburgh 16.2.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell-Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended January 27. From this report it appears that of 55 cases notified 14 were of scarlet fever, 17 of pulmonary tuberculosis, 6 of other forms of tuberculosis, 15 of diphtheria, and 3 of erysipelas. Among the 389 cases of infectious diseases in hospital at the close of the week were 142 of pulmonary tuberculosis, 100 of scarlet fever, 80 of diphtheria, 19 of measles, 12 of whooping-cough, 4 of erysipelas, 3 of cerebro-spinal fever, and 1 of enteric fever.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat.
53° 20' N., Long. 6° 15' W., for the month of
January, 1917*

Mean Height of Barometer - - - - -	29.962 inches.
Maximal Height of Barometer (22nd, at 9 p.m.)	30.411 ,,
Minimal Height of Barometer (7th, at 9 p.m.)	29.221 ,,
Mean Dry-Bulb Temperature - - - - -	37.0°
Mean Wet-Bulb Temperature - - - - -	35.2°
Mean Dew-point Temperature - - - - -	32.6°
Mean Elastic Force (Tension of Aqueous Vapour)	.185 inch.
Mean Humidity - - - - -	83.1 per cent.
Highest Temperature in Shade (on 2nd)	56.5°
Lowest Temperature in Shade (on 17th)	27.3°
Lowest Temperature on Grass (Radiation) (16th)	24.9°
Mean Amount of Cloud - - - - -	75.3 per cent.
Rainfall (on 19 days) - - - - -	1.287 inches.
Greatest Rainfall (on 13th)	0.243 inch.
General Directions of Wind - - - - -	E., W.

Remarks.

The contrast between January, 1916, and January, 1917, was most striking, and illustrates after a very picturesque fashion the singular instability of the climate of the British Isles—at one time insular or oceanic; at another time, continental or terrestrial.

In 1916 the month proved to be the mildest January experienced since 1898, the mean temperature in both cases being about 47.9° , or 6° above the average. On no occasion was frost experienced in Dublin. The wind blew almost persistently from points between S. and W., chiefly from S.W., and its strength was unusually great, amounting to gale force on the 1st, 19th and 23rd. The mild weather extended to France, the Netherlands and Denmark. Two-thirds of the heavens on an average were obscured by clouds during the month.

Opening with three days of exceptional mildness and fresh S.W. winds off the Atlantic, January, 1917, proved in the event extremely cold—low temperature, with a small diurnal range, and clouded skies being outstanding features, as well as the persistent prevalence—from the 18th onward to the close—of a strong, keen, and searching easterly air current.

During the first three weeks (1st to 20th) precipitation was frequent but not heavy—about an inch and a quarter. From the 20th to the close almost absolute drought prevailed in Dublin, this city escaping the violent snowstorm which visited the south-east, centre, and north-west of Ireland on the night of the 25th and following day. But the penetrating cold of the strong easterly and south-easterly winds which prevailed at the time will be long remembered. In Dublin the thermometer did not rise above 33° on the 29th, on which day the diurnal range of temperature was only one degree Fahrenheit. From the 12th onward the thermometer never rose higher than 40° . The percentage of cloud was 75, compared with 65 in January, 1916.

In Dublin the arithmetical mean temperature (37.9°) was below the average (41.7°) by 3.8° ; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 37.0° . In the fifty years ending with 1915, January was coldest in 1881 (M.T. = 33.2°), and warmest in 1898 (M.T. = 47.8°). In 1916 the

M.T. was 47.7° , or nearly 10° above that of January, 1917.

The mean height of the barometer was 29.962 inches, or 0.088 inch above the corrected average value for January—namely, 29.874 inches. The mercury rose to 30.411 inches at 9 p.m. of the 22nd, having fallen to 29.221 inches at 9 p.m. of the 7th. The observed range of atmospheric pressure was, therefore, 1.190 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 37.0° , or 1.0° below the value for December, 1916. Using the formula, Mean Temp. = Min. + (Max. - Min.) $\times .52$, the M.T. becomes 38.0° , compared with a thirty-five years' (1871-1905) average of 41.9° . The arithmetical mean of the maximal and minimal readings was 37.9° , compared with a thirty-five years' average of 41.7° . On the 2nd the thermometer in the screen rose to 56.5° —wind, S.W.; on the 17th the temperature fell to 27.3° —wind, W.N.W. The minimum on the grass was 24.9° , on the 16th.

The rainfall was 1.287 inches, distributed over 19 days. Of this amount 0.243 inch fell on the 13th. The average rainfall for January in the thirty-five years, 1871-1905, inclusive, was 2.210 inches, and the average number of rain-days was 18. The rainfall, therefore, was considerably below the average, while the rain-days were slightly above it. The record rainfall for January was in 1895—namely, 5.711 inches on 24 days. In 1913, also, 5.576 inches fell on 21 days. In 1876, only 0.406 inch was measured on but 9 days. In 1907, only 0.428 inch fell on but 9 days. In 1916, 1.398 inches fell on 16 days.

There was a dense fog on the evening of the 17th. High winds were noted on 11 days, but never reached the force of a gale. Hail fell on the 13th and five following days, as well as on the 20th, 30th and 31st. Snow fell on the 8th, 13th and five following days, and also in small quantity, on the 26th and 31st. The ground was snow-covered from the 16th to 19th inclusive. A lunar halo was seen on the 6th and again on the 28th. A fine aurora was seen on the night of the 10th, notwithstanding bright moonlight. Temperature reached or exceeded 50° in the screen on the first four days; while it fell to 32° in the screen on

9 occasions. The grass minimum was as low as 32° on 20 nights. On the 29th the maximal temperature in the screen was 33.3° . The highest minimum was 50.1° on the 3rd.

At the Normal Climatological Station in Trinity College, Dublin, Mr. T. Mulock Bentley reports that the mean value of the readings of the barometer was 29.985 inches, the extreme readings being—highest, 30.440 inches at 9 a.m. of the 22nd; lowest, 29.262 inches at 9 a.m. of the 7th. The mean dry-bulb temperature at 9 a.m. and 9 p.m. was 38.6° . The arithmetical mean of the daily maximal and minimal temperature was 38.0° . The screened thermometers rose to 58° on the 1st and fell to 28° on the 16th, 17th and 18th. On the 16th the grass minimum was 21° . Rain fell on 19 days to the amount of 1.18 inches, the greatest fall in 24 hours being 0.236 inch on the 13th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 22.0 hours, of which 3.1 hours occurred on the 30th. The mean daily duration of bright sunshine was only 0.7 hour. The mean earth temperatures were :—at 1 ft., 39.5° ; at 4 ft., 43.4° .

At Ardgillan, Balbriggan, Co. Dublin, 210 feet above sea level, Captain Edward Taylor, D.L., measured 1.72 inches of rain on 18 days, the rain-fall being 0.664 inch below the average and the rain-days being equal to the average. The maximal temperature in the shade was 54.9° on the 2nd, the minimum was 28.9° on the 17th. The heaviest January rainfall was 5.08 inches in 1913, the lightest was 0.59 inch in 1907.

At Stirling, Clonee, Co. Meath, Mr. J. Pilkington registered a rainfall of 1.73 inches on 18 days, the maximum in any one day being 0.37 inch on the 15th (snow-water). This station stands 231 feet above sea-level.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 1.215 inches on 16 days. The greatest fall in 24 hours was 0.235 inch on the 10th. There was a slight snowfall on the 16th and 17th.

The rainfall recorded at the Ordnance Survey Office, Phoenix Park was 1.324 inches on 19 days, the greatest

measurement in 24 hours being 0.172 inch on the 10th. The total amount of sunshine at this station was 37.1 hours, the most registered on any one day being 6.3 hours on the 9th.

At Cheeverstown Convalescent Home, Clondalkin, Miss Mary Love measured 1.07 inches of rain. Most of the precipitation was in the form of snow and hail. The rain-days were 18.

Mr. Harold Fayle sends the following abstract of observations taken at Sandford Lodge, Ranelagh, Dublin.

Mean corrected Height of Barometer -	-	29.967 inches
Highest corrected reading (22nd, 21 hours) -	-	30.41 ,,
Lowest corrected reading (8th, 9 hours) -	-	29.05 ,,
Mean Dry Bulb Temperature -	-	37.4°
Mean Wet Bulb Temperature -	-	36.0°
Mean Maximal Temperature -	-	40.8°
Mean Minimal Temperature -	-	34.4°
Arithmetical Mean Temperature -	-	37.6°
Highest Temperature in Screen (2nd) -	-	57°
Lowest Temperature in Screen (17th) -	-	25°
Lowest Temperature on Grass (16th) -	-	16°
Nights of Ground Frost -	-	16
Rainfall, on 17 days -	-	1.22 inches.
Greatest daily rainfall (17th) -	-	0.26 inch.
Mean Amount of Cloud -	-	82 per cent.
Days of Clear Sky -	-	2
Days of Overcast Sky -	-	24
General Directions of Wind -	-	from N.E. to S.E.
Maximal temperature below 40° on 17 days.		

At 89 Anglesea Road, Donnybrook, Dublin, Mr. F. Dudley Joynt registered 1.275 inches of rain on 18 days, the greatest fall in 24 hours being 0.250 inch on the 17th. The highest shade temperature was 58° on the 2nd, the lowest was 27° on the 17th.

Dr. Arthur S. Goff reports that the rainfall at Belfort House, Dundrum, Co. Dublin, was 1.35 inches on 18 days, the greatest daily measurement being 0.26 inch on the 13th. The thermometer in the shade ranged from 56° on the 1st to 26° on the 16th and 18th. The mean shade temperature was 36.7°. Snow fell on 13th, 15th, and heavily on the 16th, 17th, 30th and 31st.

Mr. W. J. McCabe, the observer for the Right Hon. Laurence Waldron, D.L., at Marino, Killiney, recorded 1.05 inches of rain on 10 days. On the 13th 0.20 inch was measured—the maximal daily fall in the month.

At Coolagad, Greystones, Co. Wicklow, Dr. John H. M. Armstrong and Miss Armstrong measured 1.41 inches of rain on 12 days, the maximum in 24 hours being 0.43 inch on the 13th. Thunder and lightning occurred at 7 a.m. of the 14th.

Mrs. Sydney O'Sullivan recorded a rainfall of 1.31 inches on 15 days at Auburn, Greystones, Co. Wicklow, the largest measurement in 24 hours being 0.36 inch on the 13th.

At the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, the Resident Medical Officer, Dr. F. O'B. Kennedy, measured 1.09 inches of rain on 18 days, the maximum in 24 hours being 0.29 inch on the 10th. The mean maximal temperature in the screen was 42°, the mean minimum was 34°, and the resultant mean temperature was 37.0°. The screened thermometers rose to 56° on the 3rd and fell to 26° on the 23rd.

The Rev. Canon Arthur Wilson reports that rain fell on 14 days at the Rectory, Dunmanway, Co. Cork, to the amount of 5.22 inches, or 0.65 inch less than the average of the 12 years, 1905-1916 (5.87 inches). The heaviest falls were 2.77 inches on the 25th, 0.78 inch on the 26th, and 0.77 inch on the 7th. On the 28th, 0.25 inch fell. There was very little rain except on the days mentioned. The fall on the 25th was only once exceeded in the last 12 years—namely, on November 16th, 1916, when 3.64 inches were measured. The third heaviest fall was on October 1st, 1916, 2.52 inches, so the three heaviest falls have occurred within the last four months. The first 6 days were mild, but the rest of the month was very cold. Skating on 7 days, 17th to 23rd. Frost nearly every day after 9th. It was the coldest January for the last 22 years at least. Slight snowfall on 7th, 27th and 28th, but no heavy snowfall. Snow still lies on the hills (February 1, 1917). N.E., E. and S.E. winds prevailed.

PERISCOPE.

HEART DISEASE AMONG ELEMENTARY SCHOOL CHILDREN.

To the number of *The British Journal of Children's Diseases* for December, 1916 (Vol. XIII., No. 156), Mr. John Priestley, M.R.C.S. (Eng.), Senior School Medical Inspector, Staffordshire Education Committee, contributes an important paper on "The clinical picture of heart disease as seen in children who are well enough to attend school." The author adopts with some hesitation a classification based on abnormal sounds which are due to some gross and permanent lesion (*organic*) and those which arise in a substantially sound heart, or in one at least only temporarily defective (*functional*).

As to the first group, that of organic cases, the author states that during the year 1912-13-14, Dr. Lila S. Greig, one of his colleagues on the school medical inspecting staff in Staffordshire, subjected the records of all cases of heart affection which have been noted at the routine inspections of 1908-9-10-11 to a careful examination. As they did not begin to revise old cases until 1912 the records scrutinised were mainly the original medical notes of a single examination.

Out of 70,138 routine children, boys and girls in equal proportions, and of the ages of 5-6, 8-9, 12-13, 13-14, 674 had signs of organic valvular disease, 48 being considered to have congenital disease, and 626 acquired. In other words, the total amount of genuine organic valvular disease among Staffordshire school children would seem to be about 0.96 per cent.

Analysing a group of 676 apparently genuine organic cases we get the following proportions of murmurs:

	Cases.	Percentage.
Mitral regurgitant	562	83.1
Mitral stenotic	27	4.0
Mitral regurgitant and stenotic	49	7.3
Tricuspid	5	0.7
Pulmonary	26	3.9
Aortic	7	1.0
	676	100.0

This proportion of the various murmurs agrees in general

^a This number consists of the above 674 organic cases minus a few, but not all of the congenital cases, and plus a few cases of non-routine children specially presented because they had heart disease.

with that found in hospital practice; mitral regurgitant murmur is by far the most frequently found. Fortunately for the general accuracy of school statistics it is the least ambiguous of the murmurs. Taking all mitral valve murmurs together the preponderance is very large indeed.

One of the most surprising things in school medical work is the number of children with organic heart murmurs who seem to have no discomfort whatever. In many cases the announcement of the discovery is received with surprise and incredulity.

Revision of old cases is now done regularly, and we have case notes of 622 children with organic heart disease (valvular) which have been under observation for several years. More than half (55 per cent.) have never at any time during the period of observation, or so far as we know before, suffered from their ailment. A few of them have other ailments, such as marked anaemia, phthisis, &c., not directly connected with their hearts, but no discomfort referable to the heart disease. Every variety of murmur is represented in this non-complaining group—congenital murmurs at pulmonary, mitral, and tricuspid valves, and mitral regurgitant, mitral stenotic, double mitral, aortic, among the post-natal cases.

Even this proportion of 55 per cent. free from complaints of any kind hardly does justice to the facts; it leaves the picture still too gloomy. Every complaint mentioned by a child or put forward by the parent or teacher which could by any stretch be ascribed to the heart is always counted in as if it were due to the heart alone, but in fact a large number of the complaints are trivial and ambiguous—"occasional malaise," "readily tired," and so forth. The complaining children out of this large group of 622 cases numbered 278, and the complaints were: Malaise alone, 145; cyanosis, 57; dyspnœa, 50; pain over heart, 30; headache, 20; fainting attacks, 17; œdema, 8; palpitation, 4; sickness, 3; sleeplessness, 2; clubbed fingers, 2; catarrhs, possibly due to venous stasis, 2; heart failure and loss of compensation, 2; epistaxis, 1; cough on exertion, 1; giddiness, 1. In a few cases the same child has two of these symptoms.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIV.—*Nephritis*.^a By WILLIAM BOXWELL, M.D.
Univ. Dubl.; F.R.C.P.I.; Physician to the Meath
Hospital and Co. Dublin Infirmary.

IT is not proposed in this paper to touch on any forms of nephritis of known bacterial origin. These conditions are understood. Bacterial affections of the kidney behave very much as similar affections elsewhere. The pathological findings are pretty constant, and are what one would expect to find, and the effects of bacterial invasion are largely local.

With ordinary non-bacterial nephritis it is quite otherwise. In most cases the aetiology is wrapped in mystery. Cases of acute nephritis following definite chills, or poisoning by drugs like cautharides, are comparatively rare. In most cases the disease comes on for no definite reason in people previously in perfect health, and no man can foretell with any certainty what the result may be. Once in a way it follows an extensive burn, though I do not re-

^a Read before the Section of Pathology in the Royal Academy of Medicine in Ireland on Friday, January 12, 1917.

member having seen such a case. Of the infectious fevers, scarlatina and diphtheria are most prone to act as predisposing causes. I have seen it complicating ichthyosis.

In the early acute stages the condition of the urine and the *post-mortem* findings correspond pretty well.

The urine is reduced in quantity, highly concentrated, throwing down a heavy precipitate of urates, uric acid, and sometimes calcium oxalate. It is frequently mixed with blood, gives a moderate amount of albumen, and shows tube-casts which are hyaline or granular, and in which are embedded red blood cells, leucocytes, epithelial cells—whose nuclei still stain, but rarely fat globules. If such fatty casts are present they are few and far between. *Pus cells* are not uncommon. The kidney itself is red or pale, rather enlarged and smooth, and the capsule peels readily. On section the cut surface is often flecked with haemorrhagic spots, and tends to bulge, due to swelling from congestion and contained exudate, and the practised eye can sometimes detect when the kidney is quite fresh—the “ground-glass” opacity of cloudy swelling.

Microscopically we see all the cardinal characteristics of an acute inflammation. Vascular change; the exudate, lying coagulated within the Bowman's capsule, with the cellular elements, congregated in the capillary loops and round about the smaller blood vessels; the tissue degeneration in the swollen and desquamating epithelial and endothelial cells, with here and there commencing fatty degeneration, and sooner or later cell proliferation. Such is an average finding when one is lucky enough to obtain the kidneys for examination where death has occurred in the early stages of the disease.

Fortunately, many of these cases get well, especially those whose onset can be traced to a definite cause. I think the prognosis is distinctly better in an acute case, brought on, for instance, by leaving a fly-blister in contact with a broken surface than in another worse similar case coming on insidiously.

If such a case fails to recover it passes into the second variety—subacute nephritis, more commonly known as chronic parenchymatous. Before death occurs, which usually does within a year or two, either from exhaustion, dropsy, intercurrent infections, or in the non-dropsical cases from uræmia—this stage of the disease is recognised from the pathological changes in the urine. It is moderate in amount, not very far removed either way from the normal, very pale, of low specific gravity, turbid from the presence of fatty tube-casts, and wholesale desquamation of the disintegrated renal epithelium, and holds albumen in enormous quantity.

The kidney one expects to find, according to the accepted teaching, is a large pale or mottled one, with an undulating surface, on which the stellate veins sometimes stand out distinctly.

The cut surface should be pale, grey, yellow, or putty-coloured, with a wide cortex, and usually dull red pyramids. The translucence of the normal kidney is gone; the capsule peels abnormally easily, being partly separated by exudation; the vessels are not obviously thickened or protruding; an occasional small cyst may be found deep in the substance of the kidney.

Microscopically, the hyperæmia is present, but one has to look for it. Parenchymatous and fatty degeneration are profound and widespread. The epithelial structure of the tubes is a wreck. Many of the tubes have no epithelium left at all, and the basement membrane—slightly thickened and oedematous—forms in places an empty net-work, lodging here a mass of disintegrated epithelial cells, there a tube-cast.

Of connective tissue proliferation there is just the amount one might expect from any inflammatory process prolonged over some considerable time. There may be some little thickening of Bowman's capsule, some cell infiltration or proliferation of the cells of the glomeruli, but there should be none of the massive cell proliferation,

arterial thickening and general fibrosis characteristic of the true chronic interstitial type. Such, I think, is a description of the "large white kidney"—near enough, at any rate, to be recognisable. And such kidneys do occur; so much is usually allowed.

What is not recognised, perhaps, so generally is the extraordinary variability of the pathological findings in cases which have been clinically identical.

One cannot say with any certainty what a kidney is until one cuts it. On the table are kidneys, with their corresponding microscopic sections, which are not brought here because they are particularly good examples of any special variety. They happen to be kidneys whose clinical history I knew. I watched the progress of these cases in hospital, and made sections myself of the kidneys after death.

In the first group, clinically these cases were typical cases of subacute nephritis, with the classical signs and symptoms. They had all pale kidneys, but two of them are amyloid; one shows well-marked, though comparatively early, interstitial nephritis; and the fourth, which was from a case of typical acute to subacute nephritis of four months' duration, in a young man of 18, with scanty blood-stained urine and mixed casts, many of them blood casts, proves on section to be a hardened old chronic interstitial nephritis, with advanced fibrotic and hyaline changes.

One does sometimes find in cases of "subacute nephritis" of unusually long duration a "small white kidney," which shows the profound parenchymatous changes of the larger variety, together with the fibrosis inseparable from all inflammatory conditions lasting a long time.

It is generally believed that subacute nephritis may be a subacute condition from the very commencement, without any antecedent acute stage.

The third type is the kidney of "chronic interstitial nephritis." The kidney is known by a large variety of

names—the “granular contracted,” the “small red,” the “morocco leather,” the “cirrhotic,” the “gouty,” and the “arterio-sclerotic” kidney.

These kidneys may be of almost any size up to normal and almost any colour—from a deep plum colour to a dirty yellow or grey.

But whatever colour or size may be present they all have certain fixed characteristics.

They have a rough surface, they have an adherent capsule, a cortex sometimes reduced to vanishing point, and sclerotic arteries, which stick upon the cut surface like crow-quills.

Microscopically, they are all fibrous. Recent inflammation is marked by dense small round-celled infiltration. The evidence of old disease is hyaline or fibrous changes, mainly in the glomeruli, Bowman's capsules, and the blood-vessels. The condition of the epithelium is quite variable. In some cases it appears to be atrophied rather than grossly degenerate: that is, the cells are cubical or flat, but the nuclei stain brightly, and are regular and distinct.

In other cases the epithelium is obviously in a state of advanced fatty degeneration. The tubules may be packed with hyaline casts. What one would like to know is the antecedents of these weather-beaten looking organs. Many of them certainly have had a “past.”

But that they are all examples of the clinical disease known as “Chronic Bright's Disease” I do not believe.

How many of them are the wrecks of an early encounter with one or other of the causes of acute tubular or glomerulo-tubal nephritis? How many owe their cirrhosis to bacterial infections, latent, and quite unsuspected by their owners?

One of the most typical examples I ever saw of this kidney was removed by a surgeon because he did not know what else to do with it, and the patient was none the worse. He had been led to expect a large pyonephrotic kidney on the evidence of an *x*-ray and a history of a mild

pyuria of unknown duration. The patient, a young woman about 24 or 25 years, complained of pain in the loins, coming on pretty suddenly, and accompanied by vomiting. I found constantly a little pus in the urine, but no tubercle bacilli. I did not get the opportunity of looking for "*B. coli*."

Later circumstances, over which neither she nor I had control, brought her under the care of a surgeon, who decided to explore the right kidney, and finding, to his disgust, instead of a large suppurating organ, a very small granular contracted one, he, to my amazement, took it out. There was no reason to suppose that the other kidney was not in the same condition. No attempt to find out anything about it had been made, and I expected to hear of the patient's early demise from uræmia. But she is alive and well, and working.

This patient had had scarlatina rather later than usual—when she was 14 or 15—and at the time her doctor was anxious about her kidneys, examining the urine frequently. But whether she ever had nephritis actually she did not know. Possibly this kidney has been the subject of that obscure affection unknown to clinicians, but described in pathological works as "*acute interstitial nephritis*," and found chiefly in people suffering from scarlatina and diphtheria.

Is there any reason why a fibrosis once set going should not continue in the kidney, just as it continues to advance in mitral stenosis long after all the acute process has subsided?

Now, as regards the relation between the clinical disease, chronic interstitial nephritis and acute or subacute tubular nephritis, I do not believe there is any. That is, I do not think that the stages are acute, subacute, and chronic interstitial. I think this last is an entirely separate entity as a disease. One of its characteristics is a cirrhotic kidney; but all cirrhotic kidneys do not connote chronic Bright's disease.

This condition hardly ever occurs before 40. It is fre-

quently found active in people who give no history of antecedent kidney trouble of any sort.

It is found equally in the idler and the worker; in the toper and the teetotaller. I do not know that alcohol has any more to say to its causation than it has to the causation of cirrhosis of the liver; and the same may be said of syphilis. I know a man who has been an intermittent drunkard since he was 18, and had syphilis when he was 25. He still has arteries like a child, and he is over 45; and he can walk a mountain, ride to hounds, and shoot driven grouse with any man, and he lives like a lord.

Pathologically, this condition is characterised by high arterial tension, sclerosed vessels, and generally an enlarged heart. I have already mentioned the chief points about the kidney in the advanced stages. The cirrhosis begins, as it does in the liver, with rather patchy small-celled infiltration. It is the primary response of the connective tissue to a feebly toxic irritant. It can be seen coming on before there is any noticeable change in the epithelium, and the epithelium often remains clear and brightly staining long after fibrosis is well established in the immediate neighbourhood. It is a pathologically chronic condition from the outset; and, as always, time is simply an accidental attribute. As pathological terms, acute and chronic have reference to tissue changes of a definite type, and inflammation may be acute, and remain acute for months; whereas, the chronic change may begin as a chronic stage from the very outset, and its "hall mark" is connective tissue proliferation. Parenchymatous changes may be quite secondary to it, or be there by the sheer accident of an intercurrent toxæmia of a different order.

The urine commonly found is what one might expect—abundant, pale, generally quite clear, without visible deposit, although hyaline casts may sometimes be collected in fair quantities by the centrifuge, of low specific gravity, and with albumen in relatively minimal amount.

Dropsy is conspicuous by its absence until the heart fails, and uræmia is always in the offing.

I believe the whole disease is generalised toxæmia, acting mainly on the vascular and renal systems, and producing there its most obvious pathological changes; and I do not think that the extent of the renal change has any more definite relation to the severity of the disease than the depth of an ulcer has to the severity of an attack of typhoid fever.

The foregoing observations simply represent my own attitude towards these puzzling diseases—an attitude having its origin partly in past teaching and partly in clinical experience, followed up by *post-mortem* examinations—naked eye and microscopic, whenever possible. No attempt has been made to collate recent views upon the subject from the newer text-books, nor is it claimed that there is anything whatever original in anything I have stated.

ART. XV.—*Bone Grafting for Pott's Caries.*^a By MAJOR

W. I. DE COURCY WHEELER, F.R.C.S.I.; Surgeon to
Mercer's Hospital, Dublin; Honorary Surgeon to the
Forces in Ireland.

In dealing with the treatment of tuberculous disease of the spine some considerations of a general kind deserve attention. In the first place if the patient is a child, reasoning on the analogy of other tuberculous joints, we may hope for bony consolidation of the diseased vertebrae after a reasonable period of recumbency on a suitable apparatus. In the case of an adult we must assume that the tuberculous process is more likely to extend or remain stationary than to diminish and disappear. With a patient from the leisured class, either adult or child, more satisfactory result is likely to be obtained than in the case of a wage earner who finds it impossible to pay attention to treatment after discharge from hospital.

* Read before the Section of Surgery in the Royal Academy of Medicine in Ireland on Friday, February 16, 1917.

Again, it is possible to obtain results in special institutions suitably situated in the country, such as cannot be hoped for in city general hospitals, where patients can be maintained only under conditions unsuitable for tuberculosis and for much too short a time. It is for these reasons that a new operative form of treatment has proved so useful, a treatment particularly suitable for adult patients presenting themselves at general hospitals with limited bed accommodation, and designed to cut short the old period of treatment by many months.

It was after 135 years of conservative surgery that operative treatment was first suggested, and it was not unnatural that surgeons were at first shy in adopting the newer methods. Before dismissing the subject of conservative treatment it is right to emphasise that there is no successful ambulatory method, and that the patient must be maintained in the recumbent position in a Phelp's box, a Whitman's splint, a Bradford or double Thomas frame, or such like appliance for in or about a year. Plaster, leather and poroplastic jackets should be reserved for the after-treatment to prevent recurrence.

In considering the operative treatment of Pott's caries it is hardly necessary to point out that the bone graft *per se* has no curative effect, but the immobilisation afforded by its introduction into the diseased segment of the spine is far more effectual than can be obtained by any form of apparatus. Albee thinks that fairly solid incorporation of the graft with the vertebrae takes place in about four weeks. Since bone grafting for various osseous lesions has become an every day operation in connection with war surgery, various theories as to the behaviour of the transplant attract attention. Some hold that the transplant dies and is absorbed and is replaced by the activity of the periosteum and endosteum, which alone survive. MacEwen's researches tend on the other hand to attribute the formation of new bone to the proliferation of osteoblasts within the bone itself, quite independently of the periosteum. Others again

believe that the graft is only osteo-conductive and acts as a scaffolding about which the neighbouring bone-forming elements form a new graft.

In considering these theories it is interesting to note how a graft actually behaves under certain pathological conditions. For example, in the presence of infection we are all familiar with the fact that detached portions of bone lying in a bath of pus in a compound comminuted fracture will survive and incorporate themselves with the callus in making a firm bony union. A transplanted graft will similarly survive infection if the infection is not too severe. In one of my cases a chronic osteomyelitis was established in the transplant as the result of infection from a bed sore. Twelve months after operation, when complete consolidation had taken place, the cortical part of the lower third of the graft was extruded as a sequestrum.

Again, if a bone graft is fractured accidentally it will unite by the formation of callus, and finally a graft will grow and survive in the abdominal wall with or without periosteum. We may therefore conclude that a graft is really viable and behaves to all intents and purposes exactly as it did when it was part and parcel of the bone from which it was removed.

My experience is limited to six cases; three have been operated on well over a year. One man had tuberculous periostitis and psoas abscess. He is back at work, has put on weight and is in every respect healthy.

The second case, already mentioned, was handicapped by osteomyelitis of the graft. She has now firm consolidation of the diseased spinal segment and is to all intents and purposes well.

The third case, that of a child with marked curvature, and the disease still active, was operated upon two years ago. In this case a rib was used as a graft in order that the curve of the transplant might accommodate itself to the kyphosis. When last seen the child was well.

In a recent case, which I show to-night, the patient is

about to leave hospital after three months' recumbency. The graft is seen in position in the photographs. The symptoms have disappeared, and the prospects are I think good.

One case of acute tuberculous caries of the spine, treated by rib grafting, died of acute acidosis a few days after operation.

In one adult I performed Hibbs' operation with an admirable result. In Hibbs' operation the base of the spinous process is fractured, denuded, and turned down into the space caused by the fracture, and turning down of the spinous process below.

Hundreds of cases of the treatment of Pott's caries by bone grafting have been published and the results leave nothing to be desired. Enthusiasts like Albee think that the bone graft is indicated in all cases and at all ages, and is even more necessary in the presence of psoas abscess or paraplegia. He and 33 other surgeons gave a report recently of 539 cases, in 460 of which the disease was arrested and in only 20 was no improvement recorded. The mortality was very low. Three died of tuberculous meningitis, and the other deaths, such as one from acidosis, could not be directly attributed to the particular operation.

In order to ensure success the following points should be observed :—There must be complete haemostasis in the bed in which the graft is to lie. If there is much blood clot around the graft no granulations or capillaries can enter until the blood clot is organised. The delay may spell death to the graft.

Care of asepsis should of course be scrupulous, Lane's technique being adopted as far as possible.

The bed for the graft must be freshened to promote rapid adhesion and organisation. Immobility after operation must be secured.

There appear to be three good methods of applying a graft in tuberculous disease of the spine :—

Albee's method of splitting the spinous processes in the form of a V and inlaying the graft is well known.

Jones's method of applying the graft alongside the spinous processes, after freshening the bony bed underneath the erector spinal muscle, is simple, and has the advantage of giving an ample muscular covering to the graft.

Halstead divides the spinous processes at their base and lifts them up with the soft tissues. He then places the graft in position and allows the spinous processes back into place in such a way that the graft lies between the two divided bony surfaces.

In my first experience I was embarrassed by turning the patient over on his back in order to obtain the graft from the tibia after the spinal bed was prepared, the patient being again turned on his face and to put the graft in position. Such a procedure is, of course, necessary. By acutely flexing the knee on the thigh the graft can be obtained and the operation completed while the patient is prone.

In the absence of the electrically-driven twin saw, which is incomparably the best instrument for bone grafting operations, the graft from the tibia can be obtained by connecting a number of drill holes the entire length of the graft with touches of a chisel. Whatever the functions of periosteum the best results will be obtained if a graft contains all the bony elements, including periosteum, bone, and endosteum.

In conclusion, a warning issued by a recent writer is worthy of note. He compares the spinal column to a watch chain embedded in paraffin, the paraffin representing the muscles and other supporting structures. Under an anaesthetic the spinal watch chain hangs in melted paraffin and can be twisted and buckled by any rough handling. In one case a push on the shoulder by the anaesthetist, in order to place the patient at a lower level on table, caused a complete buckle backwards of the tuberculous spine, which was reduced by manipulation. The result was, however, fatal.

As regards treatment after operation, a double Thomas's

frame or Jones's abduction frame should be placed in position while the patient is still on his face. Frame and patient are turned together before removal from the operating table.

Personally I have kept the patients for about eight weeks on a frame, and after about three months in hospital allow them to return home with a simple spinal support.

Many surgeons, including Albee, deprecate the use of spinal supports following operation, and the results appear to be equally good. It is better, however, to err on the safe side.

ART. XVI.—*Enteric Fever with Hyperpyrexia.*^a By HENRY C. DRURY, M.D., Dubl.; F.R.C.P.I.; Physician to Sir Patrick Dun's Hospital, Dublin.

J. R., aged 26, was admitted to Sir Patrick Dun's Hospital on Tuesday afternoon, February 6th, 1917. He stated that he had had a cold for the past fortnight, but he had felt worse since Thursday, February 1st, which appeared to be the starting point of the present illness. He had taken purgative medicines on Sunday, 4th inst., which had produced violent diarrhoea. This had subsided. He was sent to us as suffering from acute nephritis.

On examination there was nothing to be made out wrong except that the temperature was 101°, pulse 104; face flushed, and a small quantity of albumen in the urine.

He was quietly delirious at times during the night and appeared very ill, temperature having gone up to 103.8°.

Wednesday (7th) morning, temperature 103.8°, pulse 116. Careful examination failed to reveal anything further than a very few rhonchi here and there in the lungs, a dicrotic pulse, a full but not distended abdomen, and two or three doubtful spots on the abdomen; these were marked. That evening the temperature rose to 104.5°, and delirium was more marked, but of quiet type.

Thursday (8th). Temperature 103°, pulse 104, respira-

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, February 22, 1917.

tion 106. Quiet delirium at times. Conditions otherwise the same. Sort throat complained of, but nothing abnormal seen on examination. Two or three fresh spots found on the abdomen and marked. Those seen the day before, fading.

Friday (9th). Delirium more marked and more energetic. Temperature 104°, pulse 120, respiration 28. A fresh crop of rose spots found and marked. The atropine tests for enteric was made, the pulse rate taken every ten minutes for two and a half hours, special note being taken from 20-30 minutes after the injection. The result was regarded as positive—viz., atropine $\frac{1}{33}$ grain given at 1.15 o'clock, pulse at 1 o'clock being 104, at 1.15, 104; 1.25, 111; 1.35, 110; 1.45, 108; 1.55, 110; 2, 106; 2.15, 104; 2.25, 116; 2.35, 116; 2.45, 120; 2.55, 112; 3.5, 112; 3.15, 112; 3.25, 112; 3.35, 112; 3.45, 112; 3.55, 112. The injection did not appear to have any ill effect on the patient, or in fact, any effect whatever. At night, as he was still delirious, he was given 15 grains of trional. Temperature 104.2°.

Saturday (10th). Temperature 103.4°, pulse 120, respirations 40. The respirations, though increased in rate, were quiet and easy, and there was no alteration in the condition of the lungs. He remained during the day quietly delirious, taking his nourishment well and causing no trouble or anxiety. Towards evening, however, the delirium increased and by nine o'clock p.m. it had become noisy and of the "busy" type, the business of his "public house" giving him great concern. He became more and more restless and then violent, so that the two residents could not control him. His temperature had at 10.30 run up to 106.6°, and he had to be put into a strait-waistcoat, and was given a quarter of a grain of morphine; this had no effect, so $\frac{1}{100}$ grain of hyoscine was given. This quieted him and the waistcoat was immediately taken off, having been on half-an-hour, and he was tepid-sponged as the temperature was still 106.6° at 11. He was quite uncon-

scious. The temperature kept still rising, so that by 12 o'clock midnight it was 107.6° . He was now (Sunday 11th) cold-sponged every half hour, being covered with a cold damp sheet in the intervals. The temperature soon fell to 104.4° and remained at that during the early morning hours, and between 6 and 7 o'clock a.m. he again became conscious but the temperature was again 104° , the pulse very rapid, uncountable and weak. He soon again became unconscious and died 12.20 p.m.

Post-mortem examination confirmed the conditions made out during life. The lower six inches of the ileum showed large and congested Peyer's patches and solitary follicles, those near the cæcum having commencing superficial ulceration.

The case is of special interest in several points :—

(1) The acute onset with continuous high temperature— 103° - 104° —from the evening of admission, which was apparently the sixth day of disease, till it terminated; with a fatal exacerbation on the tenth day to 107.6° F.

(2) The diagnosis of enteric positively supported by the atropine test without delay and with great ease.

(3) The appearance of "delirium ferox," which appears to be a very fatal symptom in this disease.

(4) The confirmation of the diagnosis by *post-mortem* examination, where the intestinal lesions were seen in an unusually early stage.

ART. XVII.—*The Place of Curare in the Treatment of Tetanus.* By JOHN S. MCARDLE, M.Ch. (*Hon. Causd*), R.U.I., F.R.U.I., F.R.C.S.I.; Professor of Surgery, National University of Ireland; Senior Surgeon, St. Vincent's Hospital; Consulting Surgeon, National Hospital, Holles Street, and Children's Hospital, Temple Street, Dublin.

I WAS driven to the study of tetanus by the loss of one very dear to me and for whom in the then state of our knowledge I could do absolutely nothing. That chloral, morphine,

belladonna, and other drugs of the kind gave relief no one doubts, but that they were in any way curative I never believed, and when face to face with acute traumatic tetanus they failed utterly.

The case now decided in the English Criminal Courts tempts me to address you on this subject. I notice that Sir F. E. Smith said in opening his case that "few people knew anything of the lethal substance curare." Now in 1884 I experimented with the crude wourali after reading the account of the effects of this poison when employed by the South American Indians. The first strange thing I learned from the writings of the traveller who wrote that account was that the flesh of animals killed by wourali may be eaten with impunity; second, that the poison itself produces no effect whatever when taken internally.

In the June number of the DUBLIN JOURNAL OF MEDICAL SCIENCE, 1885, there is a note of a case of mine which reads as follows :—

"Mr. McArdle read the notes of a case of acute traumatic tetanus, in which two-third grain doses of urari every fifth hour resulted in a cure, the more remarkable effects produced by the above named doses being relaxation of the contracted muscles in from six to ten minutes after administration, very rapid and tumultuous action of the heart, cyanosis, laboured breathing and dilatation of the pupils. Once the patient was sufficiently under the influence of urari, the evacuations from the bowels were regular. Mr. McArdle suggested the combination of urari and pilocarpine, in the hope that the cardiac and respiratory trouble produced by the former might be prevented by the latter.

"He also showed that urari, to be of service, must be used in large doses, and that the drug is cumulative."

First wourali engaged my attention, but there are many impurities in this crude drug, and many of the animals I tried it on (chiefly horses) succumbed as much to the medicinal remedy as to the tetanic virus. The first human

subject on whom I tried the crude drug escaped only after very vigorous treatment. I was only guessing at the dosage, and so gave this patient as much of the drug as would represent half a grain of the alkaloid "curare," which we now use.

Within a half minute of the injection the patient collapsed completely. He became deeply cyanosed with irregular breathing, pulse small and almost uncountable, cold clammy skin. The pupils, which had been contracted, became momentarily widely dilated, the whole aspect of the patient being appalling.

Artificial respiration, elevation of the end of the bed, enema of ammonia, and hypodermic injection of nitrate of pilocarpine turned defeat into victory. In this case impure catgut was the cause of the trouble, as several minor cases occurred before we discovered the origin of the most distressing disease with which we are surgically acquainted, save and except malignant œdema.

This patient made a quick recovery, and I had the pleasure of dining with him when last in America, where he is a prosperous banker.

Later on urari was isolated, and at the time we thought the *ultima Thule* had been reached in regard to this substance, which had now become a well established drug. This substance is the arrow poison of the Macusi Indians of the Amazon Valley.

The dosage of this drug is well established, one-tenth to one-sixth of a grain being perfectly safe and often effectual for the relief of the spasm of tetanus.

Before the serum treatment of tetanus was thought of very many cases even of the acute form recovered under the influence of the derivatives of wourali. The specific action of these drugs is to temporarily destroy the function of the motor end plates and thus put the voluntary muscles out of action. Under their influence the unstriped muscles function quite normally, and so the patient's strength can be

maintained while the tissues destroy the tetanus toxin already in the system.

The following case will illustrate the rôle of these so-called paralysants in treatment of the dread disease, which usually shows a mortality of 80 to 90 per cent. even under favourable circumstances :—

J.M., aged 38, was admitted to St. Vincent's Hospital on June 20th, 1910, with a compound fracture dislocation at the ankle. The tibia had gone through his boot and entered the soil on the road, many particles of which became embedded in the periosteum and raw bone surface. When I saw him his jaws were already clenched, his abdomen hard as a board, and he had well-marked arching of the spine. He had had some attacks of laryngeal spasm which threatened his life. Fortunately I had in my case a tube of "curare," a drug nearer to perfection than urari. Within three minutes of a hypodermic injection of one-twelfth grain the spasms ceased. I injected into the sciatic the contents of one ampoula equal to 9 c.c. of antitetanic serum. After six hours spasms began to reappear, and so a further one-twelfth grain of curare was administered, and so for three days, every sixth hour the dose was repeated.

Owing to septic conditions I was obliged to amputate the leg at the seat of election, but to-day this man walks about as if nothing had happened to him. The Rowley leg which is now being supplied to the French and English well-to-do deprives amputation of most of its terrors, and any surgeon who does not know fully about this device should in justice to himself and his patients make himself acquainted with its perfections.

The reading of the case above referred to is very simple. If perchance we had not been in possession of a drug to control the laryngeal spasm this patient would have died. Anti-toxin would not have had time to act. By keeping the patient alive, so as to let the serum do its duty, the toxins were neutralised and recovery made possible.

It is important to note the difference between curare and curarine. The latter alkaloid is more certain in its effects, and its dosage is more certain. Its chemical composition is C₁₈ H₃₅ N.

The dose of curare is $\frac{1}{32}$ to $\frac{1}{6}$ grain.

The dose of curarine is $\frac{1}{200}$ to $\frac{1}{40}$ grain.

Their action is similar. The following notes kindly furnished me by Mr. M. J. O'Connor gives an account of the physiological properties of the derivatives of wourali :

" The characteristic action of curare--general paralysis--is due to the alkaloid ' curarine.' Curarine is not crystalline, and it is not known if it is quite pure. It was prepared by Boehm by extracting the crude ' curare ' with various solvents until he obtained a material which gave a maximal poisonousness. This curarine in doses of 0.0002 gram per kilo intravenously causes complete paralysis of a rabbit. This would mean that if a man has the same sensitiveness as a rabbit a dose of one-sixth grain (intravenously) would be fatal or nearly so. The dose of ordinary curare cannot be given, especially as it tends to deteriorate with time. It would be much greater than one-sixth grain.

" When given by the mouth curare is usually ineffective owing to slow absorption and rapid excretion through the kidneys. This excretion is so rapid that if artificial respiration be given a rabbit recovers from ten times the fatal dose in 30-90 minutes.

" Curare produces its action by preventing the nerve impulse from passing from the nerve to the muscle--paralysing the neuromuscular junction. The muscles are not all affected at once. The respiratory muscles are the last to be affected. But as the effect of the drug passes off rapidly--owing to excretion of the curarine by the urine--it would be difficult to keep an individual under the correct dosage, though perhaps not more so than to maintain anaesthesia by intravenous transfusion of an narcotic (like hedonal

narcosis). It can to some extent be antagonised by eserine. *i.e.*, an injection of eserine may cause the reappearance of spontaneous respiratory movements.

"Owing to its power of putting a block on the junction of nerve and muscle, and thereby preventing convulsions arising from the central nervous system producing any effect, curare has to be tried in tetanus strychnine poisoning and hydrophobia, and would perhaps be still more used if reliable preparations of the drug were available. It has, however, no direct antagonistic effect; in fact, if applied to the central nervous system of the frog it causes convulsions and consequently its apparent antagonism would be of use only in allowing other methods or natural defences time to act."

Since I have treated cases of tetanus by early serum injection with curarine hypodermically on the slightest sign of spasm, local or otherwise, I have had many gratifying successes. I never see a case of soil-infected wound that I fail to inject with antitoxin, and I always have at hand tablets of curare. The antitoxin should be injected into the nerve supplying the affected part, so as to intercept the toxin on its way to the central nervous system.

ART. XVIII.—*Acute Alcoholic Pancreatitis.* By WILLIAM ST. C. SYMMERS, M.B., Musgrave Professor of Pathology, Queen's University, Belfast.

AMONG the *post-mortem* examinations performed by me in Belfast during the past eight years there is a remarkable series of thirty-one cases in which the suddenness of death and the absence of any obvious cause necessitated a coroner's inquest. Most of these cases ended with startling suddenness. An apparently robust man, while chatting with a friend, collapsed dead on the pavement. Another man, while drinking on one of the cross-Channel boats, fell to the floor, and was dead by the time his boon companions could lift him up. Others, taken suddenly ill, died on the way to the hospital, or soon after admission.

In every case there was a distinct history of more or less habitual drinking, not perhaps to the extent of actual drunkenness, but to what may fairly be called "hard drinking"—indulged in day by day as a matter of custom. In no case could any history be obtained to suggest that the person was in bad health, or that medical aid had been required or sought; the patients were adult, and apparently vigorous, able to attend to their business, well enough nourished, and in more than one case in very comfortable circumstances.

The *post-mortem* appearances were identical in all the cases. Brain, lungs, heart, coronary arteries, kidneys were normal to the naked eye. Constant lesions were observed in the stomach and pancreas, and in no other part of the body were there any signs significant of morbid change.

The stomach showed more or less general catarrh, with somewhat tenacious mucus adherent in greater or lesser amount to the inner surface of the viscus, which was throughout of a dull red colour, but, in addition to this general catarrhal condition, there were, usually near the cardiac extremity and along the lesser curvature and sides of the organ, areas of a characteristic angry, blood-shot appearance, in which the mucosa was marked by very numerous bright red puncta or tiny branching lines giving a stippled aspect to the affected part. These areas of stippled hyperæmia varied in shape and size, from irregular ribbons, half-an-inch broad by two inches or more in length, to more or less circular plaques two or more inches in diameter with an irregularly radiating jagged circumference.

The pancreas was invariably affected, being distinctly redder than normal; the colour a bright red, due not only to general redness of the parenchyma, but also to irregularly stellate bright or dark red accumulations of blood at the angles between adjacent lobuli—at times appearing as small haemorrhages in these angular interlobular

spaces. On section, this same inflamed appearance was marked, the parenchyma being reddened as if the gland cells were tinted by effused blood, and the interacinar spaces showed as stellate or angular areas crammed with blood. The whole naked-eye aspect of the organ was that of an unduly red haemorrhagic tissue, contrasting markedly with the usual pallor of the pancreas as seen at *post-mortem* examination.

This haemorrhagic condition of the organ varied in intensity, some cases showing actual haemorrhages as dark red splashes shining through the connective tissue of the organ, or even implicating most of the gland, so that most of its extent was covered by blood, but most frequently this haemorrhage was absent, the gland showing merely generalised reddening of its tissue, with interacinar overcrowding of the blood-vessels. Again, even a minor degree of this interacinar hyperæmia was present, the angry, apparently inflamed areas being limited to the head or tail of the organ, the middle portion remaining only slightly more red than a normal organ.

There was never any regurgitation of bile into the pancreas, nor were gall-stones present in any of the cases. Fat necrosis was absent.

Microscopically, the pancreas showed marked congestion of blood in the fibrous septa of the gland, and also in certain of the smaller capillaries in the substance of the organ, at times with an effusion of red cells among the glandular acini. There is no marked infiltration of leucocytes, therefore one hesitates to regard the process as inflammatory. The acinar formation of the gland is often unrecognisable, appearing as if the acini were falling to pieces into a multitude of irregular abnormally staining cells. Further, there is a stage where masses of cells, with no acinar arrangement whatever, form a compact, badly-staining area, which, under the low power, has a necrotic, almost homogeneous appearance. Such areas occupy many fields of the microscope, and under the high

power appear as blurred masses of rounded cells with nucleus and protoplasm staining faintly with log-wood, and lying in an amorphous matrix of badly-staining necrotic material in which red blood-cells are found scattered at intervals. But as a rule, the destruction of the tissue has not proceeded to so marked an extent, so that the parenchyma is still recognisable as pancreatic, but with cells shrunken away from the surrounding fibrillar tissue, which, therefore, imposes itself as being more abundant than normal; and showing also numerous isolated pancreatic cells, with no acinar arrangement, staining badly with log-wood, and often taking up the eosin strongly.

We have thus in these thirty-one cases a complex of alcoholic indulgence, sudden death, gastric hyperæmia of a peculiar form, and a necrotic condition of the pancreas. At present I refer to this condition as acute pancreatitis, probably due to alcohol.

ART. XIX.—*Shell-Shock?*^a By CECIL P. SMYLY, M.D.
Univ. Dubl.; F.R.C.S.I.; Anæsthetist to Sir Patrick
Dun's Hospital, Dublin.

ONE benefit that the war has already conferred on us is that, owing to the separation of the officious nomenclator from his beloved lexicon and dictionary, we have the term "shell-shock," or its more military form, "shock-shell," instead of some melodious and mouth-filling word, such as bronteioneurotaraxis ($\beta\rho\sigma\tau\epsilon\hat{\iota}\sigma\nu$ = artificial thunder, $\nu\hat{\epsilon}\nu\rho\sigma\nu$ = nerve, $\tau\acute{a}pa\xi\iota\varsigma$ = a throwing into confusion). The latter is really more appropriate, for it seems hardly fair to crowd into two syllables the unnumbered symptoms which are grouped under the accepted title.

In the present state of our knowledge it is hardly possible to describe this new incarnation of familiar diseases under the usual headings. While definition is difficult, aetiology is

^a A paper read before the Dublin University Biological Association on Thursday, February 1, 1917.

easy, and may be summed up in two words : the war. The condition occurs not only at and behind the various fronts but also at home. The mode of onset is sometimes rapid, not to say instantaneous, at other times gradual and insidious ; there may or may not be a history of injury.

The symptoms vary from a slight tremor, through aphonia to delirium and insanity, and may appear in almost any combinations. Diagnosis in some cases presents no difficulty, while in others it allows of very different opinions. The prognosis is, I believe, good in all or nearly all cases, though in some the happy issue may be delayed till the millenium of "after the war."

As regards treatment, no hard and fast rules can be laid down owing to the extreme difficulty in sorting out which cases are physical and which are psychical, to say nothing of those that are fraudulent. In dealing with the purely psychical cases it is obvious that the method of treatment should be directed to reforming the patient's normal state of mind, and must be of a psychical nature. So-called hypnotism can be employed only in exceptional cases, whereas suggestion, using the term in its widest sense, can generally be administered in a drowsy condition or in the waking state. When this method is employed it is advisable to exclude, so far as may be possible, all sources of counter-suggestion. It is not much use making suggestions once or twice a day if another patient or person takes every opportunity of undermining them. The actual way in which the suggestions are given is of the utmost importance on account of differences in temperament, and in each case the most suitable method has to be chosen with considerable tact and a large amount of intuition, but even the exercise of the greatest care may not prevent some extraneous circumstance from having a most pernicious effect.

As my experience has so far been limited I only intend to give a short description of some of the cases which have

come under my care and of the methods employed in treating them.

No. 1, after being wounded, was generously dosed with morphine. Since leaving hospital, some months ago, he has had insomnia. This is his only symptom; in every other respect he not only looks but feels well. He was not very amenable to suggestion, and I never succeeded in inducing hypnosis, but I hope the result will be good.

No. 2 had been blown up by a shell, after which he did not remember anything till he found himself in hospital, very shaky, and with great pain in his head and neck. These symptoms gradually subsided, and about six weeks later he was transferred to the D. U. V. A. D. Auxiliary Hospital on account of insomnia. At the first attempt somnambulism occurred, and instead of one hour he slept four and a half, next night five and a half, and from that on slept about seven hours each night. I even extracted eight teeth for him, which he said he felt less than when he had had cocaine.

No. 3 was buried nearly up to his armpits by the falling in of a trench. As a result, he was unable to see for a couple of days, and had an attack of haemoptysis. The only trouble now present is a slight tremor in the hands and an occasional pain in his side.

No. 4 had been blind, deaf and dumb, as well as paralysed. On admission he could see, but had visual hallucinations, and after a few days he recovered his hearing. He had a fine tremor of the hands, which however could be controlled by suggestion; his memory had disappeared as completely as his voice, except that he was able to read and write. For several months he remained in this state, apparently in excellent health, and perfectly intelligent, but unable to speak or to remember anything about his previous life. Suddenly one night he sprang out of his bed shouting, "The guns are coming over us," and from that time continued to speak. But he had now completely forgotten the months he had been in Dublin, and for some time

believed he was still in France. At first he could not either read or write, could not even recognise any letters, except those which he had been taught to speak while dumb. Later his legs went into a state of flaccid paralysis, so that he could not walk without assistance, and his intelligence became very poor. Hypnotism had little effect on him, and waking suggestion was too easily counteracted. He is now, I believe, quite intelligent, but, through lack of encouragement, has lost any power of locomotion he had recovered.

The remaining cases I have tried to classify roughly, according to their symptoms.

No. 5 was slightly wounded in the arm, and shortly after returned to the trenches. From the time when he went in he remembers nothing till he found himself at Boulogne, unable to speak. Comrades told him that his voice gradually disappeared, and that he lost his mind. A month later in a London hospital he was roused suddenly from sleep, and when he recovered his self-control was able to speak, but with great difficulty in getting each word out. Two months later he went to bed not feeling very well. In the night he had some sort of a fit, and remained unconscious till the following night. Next morning his voice had gone again. About a fortnight later the aphonia was still complete, and he could only hear loud shouting close to his ear. Being anxious to get well, and having probably heard of another case, to be described presently, he asked me to give him electricity. Accordingly, I applied the faradic current to his larynx externally, instructing him to blow at the same time. At first he spoke so low that he could not hear himself, but on suggestion succeeded in shouting sufficiently loudly. After a week's practice he was able to speak with some effort, and his hearing had greatly improved; then one night he had a bad dream, awoke in a fright, and found himself able to speak and hear perfectly.

No. 6 was also deaf, and suffered from shooting pains

in the legs. I found that he could hear me fairly well without my raising my voice. He told me that he had always been deaf in his left ear, and thought he was not perhaps hearing quite so well as he used with the right. As for the pains in his legs, he had been off duty in rest billets for ten days before "Fritz sent him over a crump," which had blown the staircase in on top of him. In this case the only suggestion given was that he should be seen by an otologist, who diagnosed chronic otitis media on the left side, and catarrhal salpingitis on the other. The result was quite satisfactory, and a short course of acetyl-salicylic acid settled the pains in his legs.

Nos. 7 and 8 have to be taken together. The first was out with a bombing party when a shell burst near by. He awoke in the C. C. S., and was then sent on to Salonica, deaf and dumb, and rather jumpy. Two months later I tried and failed to induce hypnosis. Having read of faradisation of the vocal cords, I attempted to perform it, but this also was not a success. One night he dreamed that if only he vomited he would be able to speak. Two ounces of ipecacuanha wine had the natural, but not the desired, effect. By request, the dose was repeated next day, and while waiting for it to act he uttered an exclamation, which, however, he did not hear.

Meanwhile I had been trying to hypnotise the other man, who was dumb, but not deaf. About seven months previously his dug-out had been blow in on him, but though very shaky he did not go sick for a week. He was then sent to hospital, and his voice gradually faded away. On admission, he was unable to make any sound, and suffered from violent headache and spasmoid movements of the arms and legs. As the suggestions did not appear to be having much effect, I, with assistance, administered ether unexpectedly. While going off he exclaimed, "Oh, dear ! oh, dear !" two or three times, but rather indistinctly, as some one else had already tried to cure him by removing

three bad and about a dozen good teeth, without any anæsthetic.

After the experiment was over it was found that the deaf and dumb man had disappeared, and it was only after a considerable time that he reappeared. He said afterwards that the smell of the gas had put the wind up him altogether, and he had taken refuge on an outhouse roof. Next day, partly from shock and partly through the skilful suggestions of our lady superintendent, he recovered both voice and hearing completely.

As a result of receiving the anæsthetic his companion in misfortune did not recover his voice, but the spasmotic movements ceased, and he got rid of his insomnia. A week later I administered chloroform, and then strapped him down, and as he began to come to applied faradisation to his neck and face, with the result that he quickly recovered his voice, and has retained it though with a little hesitation at first.

No. 9 was invalidated home from Suvla Bay. Nearly ten months later he went into training again, and while trench-digging got dizzy and collapsed. Next day, on recovering, he was unable to speak. Hypnotism was not induced, and the suggestions given have so far had little effect.

No. 10 lost his nerves in a big bombardment and also his speech. He does not remember when or where this took place. He has been in several hospitals, and is very nervous. At Christmas, having improved much in general health, he was allowed out, and got drunk; since then he has been able to whisper a little, with a very bad stutter.

No. 11 suddenly became unconscious in "No Man's Land," and when he came to found a large new shell-hole beside him. While retiring he passed in front of a heavy battery in action; he lost sight, hearing and speech, and his memory also was affected. The two former returned fairly soon, but his speech only after two months. About a month later his voice went again, after an emotional disturbance. Nearly two months later he was suffering

from severe headache, pains in the right leg, and complete aphonia. After about a week of complete rest he had a bad dream, and on waking was able to speak with a bad stutter. The stutter, nervousness and headache yielded rapidly to hypnotic suggestion, but after a visit to the pantomime he lost his voice again. This time hypnotic treatment restored it without a trace of stutter within twenty-four hours; the headache and pain in the leg still persist.

No. 12 is a totally different type of case. A shell fragment passed through both cheeks close to the angle of the mouth, and removed the anterior part of the tongue and sixteen teeth. The remainder of the tongue is firmly fixed deep in the mouth, so that many letters cannot be formed at all. He can phonate fairly well, but owing to the scar-tissue round his mouth and the fixation of his tongue he has difficulty in differentiating the vowels. There is probably a certain amount of mental inhibition as well, for he can speak better for some people than others. With careful training and constant practice he should learn to speak fairly well.

In the next series of cases the symptoms are more physical than functional.

No. 13 was picked up unconscious after being thrown some distance by a heavy shell. For a time he was very shaky, and unable to walk. On admission he had pains in his shoulders and loins, as well as headache and insomnia, and jumped at the slightest disturbance. Under repeated light hypnosis his sleep gradually improved to from six to eight hours nightly, the nervousness disappeared, and the pains occurred only occasionally, so that he was able to get about.

No. 14 showed coarse tremors in the arms and legs, with great rigidity of the neck, and complained of severe throbbing in his head. On suggestion, the tremor gradually disappeared, and he learnt to relax his neck somewhat, but the throbbing in his head persisted, and as he

had a bad cough he was quite sure he was dying of consumption. He recovered sufficiently, however, to procure some whisky, and for leaving the empty bottle in the bathroom was removed to King George V. Hospital.

No. 15 was returning from furlough when he was suddenly taken bad at the station. He had a fine rapid tremor of the hands, and was unable to stand or walk without assistance. He suffered from pains in the head and giddiness and some insomnia, and always asked to have his razor removed at night "For fear he should do something." By means of waking suggestions he rapidly recovered control of the tremor (when he wanted to), and learned to walk without help. He also had to be removed for lack of self-control, and I am afraid if he had not been wearing khaki that some unkind people might have given his malady another name than shell-shock.

No. 16 exhibited violent tremors of head, arms and legs, and was unable to stand or walk. Owing to the pain in his head and giddiness he had to be kept propped up in bed. He perspired profusely, and had a very rapid pulse (as most of the cases had). Being most anxious to get well, by the help of waking suggestions exactly similar to those given in the last case, he had completely recovered within a week, though he had a slight temporary relapse a few days later.

No. 17 has proved a most difficult case. Severe headache and insomnia and violent tremor in head, arms and legs. From childhood, he says, he has suffered from "nervous attacks." After about ten months' training he went sick. Three months later he had also developed a bad stutter. Light hypnosis was induced, with some improvement in his sleep, but the other symptoms were hardly affected. Since Christmas he has been getting steadily worse, neither drugs nor suggestions having any effect. There is no optic neuritis, nor albuminuria; Wassermann negative. If he is "swinging the lead" he must be a superb actor.

No. 18 was blown up at the end of July, and remained for more than a fortnight unable to walk or speak. After six weeks at King George V. Hospital his voice came back "in bits," and he was able to get about unaided till the end of November. He then had a relapse; after which I found a continuous violent tremor and a very bad stutter. On the slightest attempt at standing he developed a regular tetanic fit, absolute rigidity and opisthotonus. Owing to such attacks he is unable to get about without assistance. The tremor diminished when he lay down, and—after hypnosis had been induced a few times—disappeared except when he tried to stand. The stutter has improved only slightly. About a month after admission he had an attack resembling a rigor (T. 101°, P. 120, R. 35, opisthotonus), but next morning he was all right again. Since then his opposition to all suggestions has been increasing, and his rate of improvement has diminished very much indeed.

No. 19 was blown up by a mine, and on recovering consciousness was dumb, unable to walk, and very nervous. His left arm and leg were paralysed. At King George V. Hospital he was at first only just able to get about, throwing his legs around in the most extraordinary way, but after several months he had improved considerably. Then he had a relapse. When transferred, he could not walk without assistance, as his left leg was completely paralysed. He also had a very bad stutter, general tremor, and insomnia, and started in terror at the least noise. Somnambulism was induced, and the tremor almost completely vanished; he slept six or seven hours a night, and his nervousness diminished; but, even though I could take him out of bed without his having any recollection, the paralysis and anaesthesia were not affected by my suggestions. His stutter has since then improved very much, but his leg is still cold, livid, anaesthetic, and flaccidly paralysed up to the hip. With massage and faradisation there has been only very slight improvement, and he can walk only with assistance.

In this and the following cases I think that the symptoms depend more on a lesion in the nervous system than in the Psyche.

No. 20 was injured eleven years ago by a heavy weight falling on his back. In 1914 he went to France, where, after about eight months, he was hurled into a shell-hole so that his back struck the edge. On coming to, his right leg was swollen, and both his legs and his back were very painful. Since then he had gone from one hospital to another, most of the time being unable to walk, and suffering from agonising pain in his head and eyes. He hardly sleeps at all, but has horrible waking dreams at night. On admission he was able to haul himself upright, and then rush a few steps with great difficulty, owing to double-dropped ankle. Since then, by aid of crutches and suggestions, he has acquired considerable control over his feet, but is still unable to walk up or down stairs or to stand without his crutches. His insomnia persists, and hypnotic drugs make him sick.

No. 21 I hardly consider a case of shell-shock. He got a perforating flesh wound just above and behind his right external condyle when loading his rifle, and since then has had complete paralysis of his brachial plexus. All the muscles below the shoulder girdle are flaccid, but do not appear wasted, while anaesthesia is complete from the side of the neck down, except a narrow strip on the inner side of the arm and forearm. Massage and electricity have had very little effect, if any.

No. 22, a young lad, shot in the region of the elbow, was very nervous and tremulous, and spent most of his time weeping and nursing his hand, which had become fixed, with the elbow semi-flexed, and in which he felt continuous and agonising pain. Through waking suggestion his mental state improved very much, and the tremor disappeared, and by massage he recovered a considerable amount of power over the hand and arm, with great diminution of the pain. As, however, the latter

persisted, and the median nerve was obviously involved in the cicatrix, on Major Purser's advice, and with his kind assistance, I exposed the nerve and dissected off it a considerable amount of scar-tissue, with the result that the pain had now almost entirely disappeared.

These cases give some small idea of the variety of the symptoms which may occur, and of the difficulty of forming a correct diagnosis. As to the methods of treatment employed, I do not lay any claim to infallibility, and shall be extremely glad if these remarks call forth useful suggestions as to future alterations and improvements.

The importance of studying the question of shell-shock will probably be recognised only after the war, when in civil life every trivial or serious injury may be followed by "shock," compared with which "railway spine" will seem the merest child's play. What a time the lawyers, medical experts, and insurance companies will have! The fate of those ingenuous enough to enlist in the threatened State Medical Service when engaged in curing such cases on a strictly limited salary will make that of an Irish dispensary doctor seem almost Elysian.

ART. XX.—*Some Observations on the Operative Treatment of Fixed Backward Displacement of the Uterus.^a*
By ALFRED SMITH, F.R.C.S.I.; Professor of Midwifery,
N.U.I; Gynæcologist, St. Vincent's Hospital.

THE operative treatment for fixed backward displacement of the uterus is one of the most gratifying advances in gynæcotic surgery. If you, about a decade ago, asked any gynæcologist what was their treatment for a fixed backward displacement uterus, he would advise you to use either ichthyol and glycerine plugs, hot douches, mud baths, or pelvic massage, &c. Now a laparotomy is performed, adhesions are broken down, and the uterus is suspended or fixed at the choice of the operator.

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland on Friday, March 2, 1917.

Has finality been reached or has the last word been said when you have suspended or fixed the uterus? The class of fixed backward displacements that I had to deal with was that caused by pelvic peritonitis, the uterus being held down by fibrous adhesions, complicated in many cases with prolapsed and fixed appendages. My routine treatment was to separate the uterus from the adhesions, straighten out the tubes, free the ovaries, resect when necessary, and draw loops of the round ligaments through the recti muscles, stitch them there after the manner recommended by Dr. Gilliam. The "end results" were not satisfactory. Many patients afterwards complained of dragging pains; referred to the suspension points in the recti muscles. I thought that perhaps my technique was faulty.

I soon found that all cases could not be treated alike, but that each should be treated on its merits. The behaviour of the uterus was different after the separation of the adhesions. In some cases the uterus came easily up to the abdominal wall, showing a certain amount of relaxation of its supports. In others it did not come up so easily, but some considerable degree of force was necessary to draw it up into position. Thus, I was able to divide my cases into two groups: (a) The uterus with relaxed supports. (b) The uterus with unrelaxed supports.

Group (b) should be treated quite differently from group (a). The uterus with relaxed supports—group (a)—must be suspended or fixed. Suspended preferably during the child-bearing age; fixed when the climacteric was passed.

On freeing uteri with unrelaxed supports three types were met with: (1) Where the uterus righted itself automatically; (2) where manual replacement was necessary; and (3) where, owing to a thickened and shortened uterosacral ligament, the uterus could not be brought into the normal position of anteflexion. Types (1) and (2) have

little tendency to fall back ; suspension or fixation is therefore unnecessary.

As there is always a certain amount of interference with the blood circulation in fixed displacements of the uterus, I find it advisable to place a gauze tampon in the vagina, so as to tilt the cervix backwards. This enables the blood circulation of the uterus to become normal. Tampons should be removed at the end of twenty-four hours, the vagina irrigated, and a fresh tampon introduced.

The treatment of type (3), fixed displacements, with thickened and shortened utero-sacral ligaments baffles me. I merely free the uterus from its entanglements, straighten out tubes, release the ovaries where necessary, and leave the rest to nature. It would be hopeless to attempt suspension or fixation.

The unsatisfactory "end results" previously mentioned of the dragging pains referred to the suspension points in the recti muscles was now explained. I had been suspending uteri with unrelaxed supports when I should have left them alone.

I bring these observations before you in the hope of interesting you in determining the limitations of suspension or fixation, and of putting the operation treatment of fixed displacement on a scientific footing. Few of the modern works deal with the question. Dr. Jellett, in his 1916 "*Practice of Gynaecology*," recommends the breaking down of adhesions with a view of correcting the mal-positions which they cause, and in the ventral suspension or fixation of the uterus.

My classifications and groupings are purely provisional. Judging from the literature at my disposal, this subject has not been fully dealt with. Possibly, members may give me references. At any rate, we have ample material in our clinics at the Rotunda, Coombe, and Holles Street Hospitals to once and for all determine and give a lead as to the correct principal that should govern gynaecologists in their treatment of fixed backward displacements.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. A Record of the Work done in Science, Literature and Art during the Session, 1915-1916. By numerous Societies and Government Institutions. Compiled from Official Sources. Thirty-third Annual Issue. London : Charles Griffin & Company, Ltd. 1916. 8vo. Pp. viii + 336.

THIS number of the Year-Book marks the thirty-third year of issue. A generation has passed away since it first came to light; and to all scientific workers it has been most helpful as a book of reference and a disseminator of knowledge. Every department of science, literature and medicine contributes to the enrichment of the volume, and multitudes of students benefit by its treasures. It tells of the advance of the different sciences and the direction in which most progress is being made, and reflects the passing theories of every age. To-day the book is valuable as a record of existing views on the many subjects of which it treats, and as time passes each volume becomes more valuable as an evidence, especially in Medicine, of our interpretation of facts. Of what deep interest would such a work of reference of the seventeenth and eighteenth centuries be to us; and how much more modest it would make us in our estimate of our works.

To many—indeed we may say to very many—the book is a useful reference one; in medicine we have found it so for many years past; and as the present volume is fully equal to its predecessors, we recommend it to our readers. The enormous range of subjects dealt with is amazing, and the wants of all are catered for.

We sometimes enjoy an excursus into by-paths and endeavour to get as far from medicine as possible, and find noted as obtainable reading "The Legend of Jannes and Jambres"; the "Cobbens Prophecy of 1594"; papers on "Elementary Welsh Genealogy," and note that the "Pali Society" are publishing the "Canonical and other Books of the Primitive Buddhists in the original Pali." But to come back to our mutton, we note that some twenty-five double-columned pages are occupied by a list of names of papers read at the meetings of medical societies in 1916. A list which greatly facilitates medical students both in verifying references and in making up the history of any subject.

The Ductless Glandular Diseases. By WILHELM FALTA; translated and edited by M. K. MEYERS, M.D., with a Foreword by A. E. GARROD, M.D., F.R.S. 2nd edition. 1916. Philadelphia.

FIFTY years ago the ductless or endocrine glands offered little attraction to anatomists, and, with the single exception of the adrenals, neither their physiology nor their pathology awakened interest. The pituitary and pineal bodies served merely as targets for an examiner in anatomy to aim at to the confusion of unlucky students.

What a change now when a portly volume of nearly 700 pages is needed to expound their mysteries and to show their profound importance in the study of the life, growth, and health of the animal body! The present volume is concerned with the clinical aspects of the diseases of the ductless glands, and hence appeals to the intelligence of every educated physician. For details as to experimental physiology and pathology recourse should be had to the excellent works of A. Biedl and of Schäfer. From the time that Addison (1855) described the disease which has ever since rightly borne his name 30 years elapsed before the next step in advance was achieved by the recognition of the de-

pendence of cretinism and myxœdema upon disease of the thyroid glands, representing functional inefficiency. A further landmark was reached in 1886 by the ascription of Graves' disease to an abnormally *increased* activity of a ductless gland.

Dr. A. E. Garrod, in a foreword, rightly points out as a remarkable example of the economy of nature that in some instances two or more structures yielding internal secretions have been welded together into a single compact organ. Thus the chromaffin medulla of the adrenals is clothed with a functionally distinct cortex, and the pituitary body—small as it is—appears to be even more complex.

Another subject full of interest is the inter-relation of the endocrine glands and the nervous system, and this topic receives ample consideration in Professor Falta's pages. This view helps us to better apprehend some of the obscure problems presented by diabetes mellitus. Chapter I. gives an excellent and luminous account of the history of the general problems associated with the ductless glands.

Succeeding chapters deal with the thyroid and parathyroids, thymus, hypophysis (pituitary), epiphysis (pineal), suprarenals, sexual glands, pluri-glandular diseases, pancreatic islands, obesity, infantilism, dwarfism, chondro-dystrophy, and Mongolism.

One hundred and one admirable photographs and figures adorn the text, which is increased in value by addenda which the editor has supplied at the end of nearly every chapter, and which reflect American and English views.

The entire volume is a credit to both author and translator, and it deserves a honourable place in the library of every practitioner.

From the wide scope of its contents as indicated above it is plain that it would be idle to attempt a detailed survey or criticism of the book.

It is well written and gracefully translated, and embodies a vast record of conscientious and inspiring work, which should both stimulate and enrich the clinical physician.

Transactions of the Thirty-seventh Meeting of the American Laryngological Association, held at Niagara Falls, Canada, June 1st, 2nd and 3rd, 1915. New York : Published by the Association. 1915. 8vo. Pp. 402.

THE American Laryngological Association met at Niagara Falls, Canada, on the first three days of June, 1915, and as usual excellent papers were read and fully discussed. The initiative and hard work shown by the authors of these papers are worthy of all praise. A short note of some of the more interesting papers is appended.

Dr. Hubbard read a paper on "Papilloma of the Larynx," and in it he described his method of operating, which is to curette the larynx both from above and below, the latter being done through the tracheotomy wound. He prefers not to allow the tracheotomy tube to remain in for a long time, and, as after-treatment, he uses massage of the larynx and neck. Other members suggested different forms of treatment to this, some being in favour of laryngofissure, while Dr. Lynch spoke of his experience with his new suspension laryngoscope, of which further mention will be made later on.

Dr. George Richards reports a case of "Foreign Body in the Lung," in which he succeeded in making the primary diagnosis by means of a blood examination. He found a leucocytosis of about 12,000, and as this recurred on several occasions he insisted on a second *x*-ray examination, which proved the presence of a tack in the right bronchus; he was fortunate in being able to effect its removal. The association of leucocytosis with a foreign body in the lung seems to be a new point in the diagnosis of foreign bodies in the bronchi.

Dr. Ingals relates several cases where he was able to remove foreign bodies through the bronchoscope by means of the fluorescent screw when it would have been quite impossible to direct his forceps properly to the foreign body without its help.

A very excellent paper on Leucoplakia by Dr. Levy was read, in which he attempted to bring the bibliography up to date, and it will be of great use to many when making up this subject.

Then follow several papers on the question of Tonsillectomy and the anatomy of the tonsil, the swing of the pendulum being rather against indiscriminate operation.

Dr. Gordon Wilson read a very interesting paper on "The Etiology of Pansinusitis." He made a good many animal experiments to prove his points, and a good deal of what he says about the lymph flow and the surface flow on the mucous membrane is worthy of study.

There are also some interesting papers on various details with regard to the accessory sinuses and methods of operating on them. The only new point mentioned is that some are now treating them by means of a vacuum alternating with a high pressure spray, which makes it possible for medicaments to reach further into the cavities than would otherwise be the case.

Dr. George C. Stout contributed an interesting paper on "Headaches due to Non-suppurative Intranasal Conditions." He reports the cases of some patients who have come to him, showing that there are undoubtedly many cases of headache due to pressure either turbinal or from a spur, which are usually diagnosticated merely as neuralgic, and in which there is no suppurative condition. The removal of the point of pressure at once gives great or entire relief. These facts should be borne in mind when one is dealing with neuralgia of the fifth nerve.

Dr. Greenfield Sluder contributed two most interesting articles in continuation of others found in this Journal on previous occasions, on the subject of Inflammation of the Sphenoid affecting the various nerve trunks which run in close approximation to it, and which include the Vidian nerve and the nasal and spheno-palatine or Meckel's ganglion. To sum up his deductions one may say that frequently chronic inflammation in the sphenoid cavity

produces hyperplasia, which involves the bony structure round it, and thus narrows the bony canals and causes pressure on the nerves. This in turn produces many forms of neuralgia, which are commonly designated as migraine. He suggests several forms of treatment, and reports cases to show improvement after carrying out these procedures.

Dr. R. C. Lynch made a communication on "Suspension Laryngoscopy." He showed an improved instrument of his design after the pattern of Killian, and explained the advantages of its use. He also recounted cases of removal of carcinoma and other tumours from the lumen of the larynx, even below the vocal cords, by its means.

Interstate Medical Journal. December, 1916. Vol.
XXIII. No. 12.

THIS issue of the *Interstate Medical Journal* is wholly devoted to papers on obstetrics and gynaecology. It consists of close on one hundred and thirty pages, and contains numerous beautiful and helpful illustrations. The list of contributors includes the names of many of the best-known specialists of the Southern States, and some well-known names of New York, Boston, and Chicago surgeons.

"Prenatal and Postnatal Care" is the subject of Dr. Kellogg's paper, and is an excellent summary of the risks mothers are liable to during their child-bearing period. It constitutes a guide to the physician to the treatment best calculated to avoid and defend the patient from danger.

Dr. Pierce writes of "Persistent Occipitoposterior Positions," a subject which does not admit of much original writing, but the author deserves credit for giving to tyros, and indeed to many others, a very clear account of how best to effect forceps rotation: an exposition for which beginners should be grateful, especially as the advice is illustrated by fifteen cases.

"Genital tuberculosis in the female must no longer be considered as a local disease, but must be looked upon as a part of a general constitutional malady," is the keynote of Dr. Geist's paper, "Tubercular Adnexitis." He considers that "the hematogenous route of infection" is the most common, while he recognises that infection may be—and in some cases is—caused by direct extension from a lesion in a neighbouring structure. He likewise draws attention to the fact that "tuberculosis of the placenta is by no means the rarity that we have been led to believe." Perhaps one of his most important statements, one in which we heartily agree, is that "involvement is possible by the extension of the tuberculosis from the peritoneum to the genitalia." On the much disputed question of primary tuberculosis of the tubes, he writes: "An absolutely unimpeachable case of an ascending infection has not yet been described." He illustrates his paper with the history of twenty-eight cases, which present many interesting facts: the patients ranged in age from twenty to thirty-five years.

"Nitrous Oxide and Oxygen in Surgery and Obstetrics" is the title of a paper which Dr. Davis contributes. He writes—"It seems probable that this anaesthetic was not employed in the practice of a physician or dentist until Horace Wells, of Hartford, Connecticut, in 1844, inhaled it during a tooth extraction." We cannot quite accept this statement. Mrs. Anna Beddoes (*née* Edgeworth) inhaled nitrous oxide for the relief of a toothache, and as she got relief from pain by this inhalation, she recommended the use of the gas to Davy. This took place in the Hot Wells Pneumatic Institution. But long prior to this, when William Higgins was preparing the "Factitious 'Airs'" in the Birmingham Institute, the inhalation of the different factitious airs, from being used as therapeutic agents, came to be freely used for amusement, and of all the "airs" the nitrous oxide was the favourite. The amusement spread to the United States, and many deaths

resulted from the use of an impure oxide, and the fatalities called forth a firm, unexaggerated warning from a New York chemist named Mitchell against the free use of the gas. It was at a "laughing gas" gathering that Horace Wells saw the analgesic and anaesthetic effects of the gas. But to Mrs. Anna Beddoes is due the discovery of its analgesic properties. Wells recognised the properties of the gas, as thousands had done; but he did more—he saw in its properties a vision of wealth; a vision that to him was brilliant and lethal as a flash of lightning; and we may add that there was no necessity for Bert, Klikowitsch and Winckel to work with "extremely crude apparatus." The apparatus with which that Irishwoman inhaled the gas and recognised its analgesic properties was devised by Watt, whose name is a household word, and modified by William Higgins, of Sligo, the first to annunciate "the law of multiple proportions," anticipating Dalton's atomic theory by close on thirty years; and prophesying the discovery of an anaesthetic in the ethyl series of compounds—a prophecy which Crawford Williamson Long, of Irish descent, fulfilled in March, 1842.

We criticise the article freely because of its general excellence, which allows of our so doing. Indeed, to the historical portion alone can exception be taken; for all the rest we have naught but praise.

"Plastic Gynaecology" is the title of Dr. Sked's paper, which is beautifully illustrated, and deals very fully with conditions which call for colporrhaphy, and the many different modifications of the operation to suit varying types of injury and disease.

Dr. Stein writes on the "Complications of Pregnancy," and "in view of the relative infrequency of tetany as a sequel after gynaecological operations" he gives a list of fifteen illustrated cases, in two of which it followed abdominal punctures and subcutaneous injection respectively.

Space does not allow of a notice of the remaining six

cases, all of which are worthy of study. We have, however, said enough to show how valuable the number before us is, both to the general practitioner and to the specialist; and we may add it is a worthy successor to those which preceded it.

The Transactions of the Edinburgh Obstetrical Society.

Vol. XXXIX. Session 1913-1914. Edinburgh : Oliver & Boyd. 1914. Pp. 379 + xxxii.

We have received for review the Thirty-ninth Volume of "The Transactions of the Edinburgh Obstetrical Society." The war must be blamed for the postponed notice of the 1913-1914 Transactions till 1917 : we apologise for the delay.

This record is most useful in every way, but in order that the important papers and discussions may be treated with the respect which they deserve, the cross-compliments must be banished. In future volumes we hope that the "congratulations" and "thanks" will be eliminated.

Arising out of the paper of Dr. Freeland Barbour, "Gynaecology in the Medical Curriculum," is thoroughly discussed, and the necessity for its clinical study is emphasised. In this city, as in Edinburgh, there is a vast amount of material wasted, and the student finds but in few of the clinical hospitals that complete arrangements have been made for the necessary study of this important subject.

About 65 pages are devoted to Dr. Johnstone's noteworthy study of the early human ovum, and some fine illustrations accompany this excessively interesting communication.

Dr. James Young, in a carefully-written paper, pleads for the placental theory of eclampsia, and speaks of the aetiology of this disease and albuminuria and their relation to accidental haemorrhage.

Among the other interesting papers are three by Dr. Berry Hart, on "Biometric Analysis of some Insemina-

tion-Labour and Menstrual-Labour Curves in certain Mammalia," "A New Route of Inquiry as to the Nature and Establishment of the Typical Sex-ensemble in the Mammalia," and "On the Atypical Male and Female Sex-ensemble (so-called Hermaphroditism and Pseudo-hermaphroditism)."

Edinburgh is certainly to be congratulated on the possession of such a useful Obstetrical Society. B. S.

How to take Care of your Teeth. London: Forster Groom & Co., Ltd. 1917.

THIS booklet of some seventy odd pages is the most blatant bit of advertising we have ever come across in any thing pertaining to medical literature. The author, a Mr. Hy. E. Sykes-Brown, M.I.H., whose appended initials we entirely fail to interpret, gives a likeness of himself on the front page, and repeats his portraiture three times in the body of the advertisement, for this is all the booklet can be considered; and of all advertisements it is one of the most audacious, being written in hysterical language in a pseudo-scientific style. This production is dedicated to one of our most respected and accomplished physicians, Sir William Osler. We should very much like to know if the learned baronet is aware of the liberty taken with his name.

We have good grounds for believing that both the dedication of this advertisement and its accompanying poem are wholly unwarranted, and, therefore, unjustifiable.

The author, however, seems equal to any unconventional act, and thinks he can successfully outrage professional courtesy, as may be seen by his sending this ridiculous advertisement to us for notice.

Archives médicales belges. 70^e Année. No. 1. Janvier, 1917. Paris : J. B. Baillière et Fils. 8vo. Pp. 96.

THIS number of our Belgian contemporary commences the seventieth year of publication by an unusually rich series of contributions; making a number of permanent value.

"Après deux Ans de Guerre" is the title of an interesting and instructive editorial telling of the enormous changes wrought in military medicine by the new instruments of destruction, designed to prevent healing of wounds, in the formation of which toxic gases were largely used. And it is painful to reflect on the fact that the principal of these halogen gases was largely manufactured by the Germans for the purpose of providing indigo dyes, when the refusal to support the growth of indigo in India by the English Government made the synthetic industry such a huge success "that its exports attained to the sum of £78,000,000 annually, and in 1914 provided them with apparatus and employees to suffocate our men with lethal vapours. At this terrible price we were also brought to revise our theories on antiseptics and to recognise that anaerobic and aerobic bodies were not both amenable to treatment by one cast-iron system. Dr. D. P. Dérache writes on Gunshot Wounds of the Knee, and tells us with regret of the many reports of such wounds as came to hand. This article is illustrated by eight good photographs. "Paludal Fever in Flanders" is the title of Dr. E. Renaux's paper, a contribution that brings back to memory Laveran's classic of 1891. Dr. Renaux tells of the difficulty experienced in differentiating the disease from broncho-pneumonia, influenza, acute bronchitis, gastritis and so forth, and illustrates his paper with many temperature charts and quite a number of cases, some of which demonstrate that, even since the Professor of Medicine of Val de Grace taught us what the nature of the disease is the diagnosis is not always so easy as senior students are inclined to believe. Dr. R. Marchal writes an interesting review on injuries to peripheral nerves in the war, from which we take the following quotation which contains a truth too often forgotten :—"An injury of a mixed nerve may occasion interference with movement, sensation, circulation, body heat, secretions, and nutrition, all of which we range under the classification

vegetative." His writing is an excursus into a domain in which the late Robert W. Smith was a pioneer, and from which he enriched medicine with his classic "Neuromata." We cannot close without reference to a very sympathetic appreciation of Sir Victor Horsley, "who fell, as an English officer, in the skirmish of d'Amara, on the Tigris. . . . Sir Victor did not hesitate for a moment to place his skill and services at the disposal of his country; he was in all the expeditions: dangerous and glorious, in France, in Egypt, at Gallipoli, and in Mesopotamia, where he died on the 15th July, 1916." As might be expected, the summary of his work and an account of his medical training and teaching occupy the greater part of the obituary notice, which has been written by some one familiar with the subject of his memoir and of his unceasing industry, great mental activity, originality and initiative power.

Bolatin de Medicina e Higienc. Organo de la Sociedad
Medica de Barrañquila. Año 1, No. 4.

THIS number of the Bulletin of Medicine and Hygiene opens with the conclusions of a very interesting account of trachoma. Dr. M. Arango, the author of the paper, quotes Dr. Guiteras as saying that in Cuba the disease has only recently attracted attention. Dr. Estevez says that the disease is unknown in Ecuador; Dr. Ortega of Azevidia writes that it is unknown in Guatemala; Drs. Arriaga and Gonzalez report the same of Honduras and Salvador respectively. It is very seldom met with in Argentina according to Dr. Alfaro of Alvarez; Drs. Fernandez and Espiro of Olivier give a like report of Uruguay; and Dr. Razetti, of Ortiz, state that the disease is very seldom met with in Venezuela. In Chili the disease was imported in 1881, in 1895 it was found to affect 0.50 per cent. of the population; and in 1906 the percentage had reached to 3.10

per cent. In the United States there are certain well recognised foci of the disease; the marshy borders of the Ohio, where the utmost vigilance has to be observed to keep the disease in check; Puerto Rico, where the proportion of the disease to the population reaches the extraordinary rate of 9.0 per cent.; Kentucky has a percentage of 7.50 per cent.; Florida has little more than half as high a morbidity, to wit, 4 per cent.; but the recently formed State of Oklahoma has a percentage of 68.72 per cent. Dr. Arango ascribes the rapid propagation of the disease to overcrowding and unhygienic surroundings. He further looks on the disease as a sequela of measles, as 75 per cent. of infected children were found to have had measles. As all children, or at least 99.0 per cent. of them, get measles, we are surprised that the percentage is not higher. Dr. Eugenio de la Hoz concludes his paper, "On the Treatment of Tetanus," by a series of five illustrative cases, designed to show the great value of anti-tetanoid serum injections; but we note that each patient was dosed with large quantities of chloral administered at short intervals. We, therefore, think that chloral is entitled to some of the credit for the uniform success attending the treatment. The greater part of the remainder of the Bulletin is taken up with a "Study of the Value of Filtre Beds in the Bestowal of Sewage," by Dr. Luis Mazzeo. The paper contains some diagrams, and, of course, statistics. Its chief value in our eyes, however, consists in showing how zealous our medical brethren of the Republic of Colombia are to inculcate their lay people with the knowledge of the value of hygienic measures. We are glad to note that their teaching is bearing fruit, for the authorities of Barranquilla, the chief commercial city of the Republic, look favourably on a scheme of hygiene, which, if carried out, is well calculated to reduce the rates both of morbidity and mortality of the inhabitants of this important commercial city.

PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—R. D. PUREFOY, M.D., F.R.C.S.I.

General Secretary—J. A. SCOTT, M.D., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—E. J. McWEENEY, M.D., F.R.C.P.I.

Secretary—T. T. O'FARRELL, M.D., F.R.C.S.I.

Friday, January 12, 1917.

Discussion on Nephritis.

DR. WILLIAM BOXWELL, in opening the discussion, read a short paper embodying his own personal views on non-bacterial nephritis—acute, subacute and chronic interstitial. [His paper is published in full at page 225.]

DR. W. M. CROFTON gave an account of some cases with subacute and chronic nephritis, in which he had examined the bacteriology of the urine, and most of which cases he had treated with vaccines or microbes isolated from the urine. Most of the cases were treated in Malta during his service there, and when the patients were convalescent they were sent home, so that neither the case-sheets nor the after-history of the patients are available.

CASE I.—Lance-Corporal C. Had been in hospital some time, invalided from Salonika with nephritis. He suffered

from headache, œdema of the legs, &c. He had a marked amount of albumen and casts and bacilli in his urine. A vaccine was made, and he received a series of doses. When he left the hospital the albumen was reduced to a trace.

CASE II.—Private L. Had a very similar story. He had albumen and casts in his urine. He was treated by vaccines. Had only a trace of albumen on leaving hospital.

CASE III.—Private D. Had been in hospital from Salonika with subacute nephritis. A Gram-negative non-motile bacillus was isolated from his urine. The albumen was markedly reduced after the first injection.

CASE IV.—Private C. Was invalided from Salonika with nephritis. He had the pale, puffy face of a nephritic, and had a considerable amount of œdema. *Staphylococcus aureus* was isolated. He was very markedly improved. Little œdema in his legs and a marked reduction of albumen.

CASE V.—Private B. Also had large numbers of staphylococcus in his urine. The amount of albumen in the urine was certainly very much reduced. He went home very markedly improved.

CASE VI.—Private W. Subacute nephritis, with a slight temperature. Albumen, tube-casts, and some pus cells, and bacilli in his urine. Vaccines were made. The urine became completely free of albumen, casts, and microbes.

THE MALTA CASES.—All had been under ordinary treatment for a considerable time in hospital before vaccine treatment was applied, so Dr. Crofton considered that the vaccines must have had something to do with their improvement. The only conclusions he wished to draw from these few cases is that this is a hopeful line of investigation and treatment of Bright's disease.

DR. DRURY said it was much to be regretted that there had been so little real advance in our knowledge of this most serious disease since the days of Bright; and he considered that this was largely due to the separation of the clinician and the pathologist, which was growing greater every day. This was necessary, but unfortunate; for in such a large subject, unless investigation was confined by certain men to one single line, whether it be to elucidate the cause or explain certain symptoms, no advance could be expected. At present

if the clinician sent the organs of two cases, quite dissimilar as to their symptoms, all the information he got back was "chronic nephritis" (which he already knew) and information as to the amount of cellular or fibrous elements present (which did not help him).

He thought, though, that too much was expected of the pathologist and bacteriologist. Probably more information would be got through the medium of bio-chemistry, in which branch little had been done yet.

This, too, might yield us aids to prognosis, which we now sadly lacked. There was only one aid which he knew of that could be counted on—that was albuminuric retinitis, which in his experience meant that the case was very near its termination. Another symptom had been referred to as having much the same prognostic value—namely, dyspncea, with which he disagreed; and he briefly outlined a case in which it was severe and the sole cause of the patient seeking medical advice. It disappeared or it was kept in abeyance for over two years, and then, on reappearing, the patient was persuaded that it was cardiac, and was so treated till it became so bad that he sought other advice. Another symptom—headache—was surely more likely to be explained by the bio-chemist than by the pathologist. He had his own explanation, but it was pure theory, yet it was all there was to act on in treatment. It was, he believed, a symptom of grave import, not as to duration, but of the probable sudden termination of the case.

Trench Nephritis.

DR. T. GILLMAN MOORHEAD gave a short description of this affection, with several references to some cases that had come under his notice in a military hospital in Egypt, and also in his wards at home.

He pointed out that the usual early symptoms consist of transient oedema, dyspncea, and albuminuria. In some cases also there was distinct cardiac dilatation with cyanosis. Usually, at the onset, there is a febrile period, lasting about three or four days. The ætiology of the condition has been much discussed, but the only thing that seems at all settled is that the disease must be microbial, as the onset and sym-

ptoms are exactly similar to those met with in known acute infections. The prognosis in most cases is good, several patients having completely recovered in three or four weeks from the commencement of their illness; in others, the albuminuria persists after all other signs have gone, and in his own experience several cases of persistent haematuria have also been encountered. As regards treatment, he had found the diets of Langdon Brown particularly suitable; complete rest at first, modified rest later on, and general tonics were the only other things required.

DR. A. R. PARSONS detailed the findings in several cases of nephritis which had come under his notice. He mentioned some of the difficulties which arise in connection with the examination of persons for life insurance, particularly those persons who, though apparently healthy, nevertheless exhibited albumen in the urine. He considered that catheter specimens in the case of female patients should always be examined, but in some cases circumstances did not allow of such specimens to be taken.

DR. F. KENNEDY CAHILL stated that he had found that the amount of albumen excreted by patients suffering from so-called physiological albuminuria was very variable.

DR. ROWLETTE hoped for results from bacteriological research into the origin of nephritis. Acute nephritis presented so clear resemblances to known infective diseases that one could hardly believe that its cause was not micro-organismal. With regard to some forms of chronic nephritis the case might be different. In bacteriological study of the urine he thought it necessary to obtain the specimen by a ureteral catheter before deciding that the organisms which might be found came from the kidney.

DR. SETON PRINGLE emphasised the importance of strict asepsis in the collection of urine samples for bacteriological examination.

THE PRESIDENT said that he quite agreed with Dr. Drury in regretting the divorce of the clinical from the pathological study of such difficult conditions as nephritis. But the more deeply the analysis of the cases was pushed, and the greater the demand on time and technical resources, the less likely it was that the two aspects could be dealt with by the same individual.

So far as he could see, the best way to bring about the desired union of clinical with pathological experience would be to appoint whole-time professors of clinical medicine, debarred from private practice, and attached to hospitals provided with every requisite for pathological research. Such appointments had been made in the United States, and he hoped we would do likewise.

He inquired of Dr. Crofton the grounds on the strength of which he considered the organisms he had isolated from the urine of his cases of nephritis were really infecting. Was there any serological or microscopic evidence? He thought that before one could fairly attribute the good results to the effects of vaccine therapy it would be necessary to compare the results with those in similar cases not so treated. Rest in bed and good food would, he thought, cause most such cases to clear up.

He agreed that in addition to bacteriological methods those of bio-chemistry and bio-physics should be more extensively employed in the elucidation of the problems raised by nephritis. An attempt should be made to ascertain systematically how in a given case the kidney discharged its three functions—filtration, secretion, and re-absorption. To do this properly the content of the patient's diet in water, salts, extractives, carbohydrates, and proteins would have to be exactly ascertained. He referred to the study of the tube-casts found in the urine of nephritis, and considered that the presence of blood-casts and epithelial casts indicated a severer process than the hyaline and granular varieties. In cases of trench nephritis which he had examined at the Castle Red Cross Hospital, he found chiefly the two former varieties together with many free red cells and free haemoglobin in brownish granular form, and also rather more leucocytes than usual.

LITERARY NOTE.

THE fourth edition of Mr. Comyns Berkeley's "Handbook of Midwifery" is announced for early publication by the house of Cassell. It has been considerably expanded to meet the additional requirements of the Central Midwives Board, and to render it suitable for obstetric dressers.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, February 24, 1917.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended Saturday, February 24, 1917, in the Dublin Registration Area and the eighteen principal provincial Urban Districts of Ireland was 28.4 per 1,000 of the aggregate population, which for the purposes of these returns is estimated at 1,127,268. The deaths from all causes registered in the week ended Saturday, February 24, and during the period of four weeks ended on that date, respectively, were equal to the following annual rates per 1,000 of the population :—Nineteen Town Districts, 28.4 and 28.1 ; Dublin Registration Area, 26.8 and 27.1 ; Dublin City, 28.0 and 28.8 ; Belfast, 31.2 and 29.7 ; Cork, 25.2 and 28.9 ; Londonderry, 30.0 and 30.6 ; Limerick, 27.1 and 30.8 ; and Waterford, 30.4 and 26.6.

The deaths from certain epidemic diseases—namely, enteric fever, typhus, small-pox, measles, scarlet fever, whooping-cough, diphtheria, dysentery, and diarrhoeal diseases—registered in the nineteen town districts during the week ended Saturday, February 24, 1917, were equal to an annual rate of 1.9 per 1,000. Among the 235 deaths from all causes in Belfast were 1 from enteric fever, 7 from measles, 2 from whooping-cough, 2 from diphtheria, and 8 from diarrhoeal diseases. Among 20 deaths recorded in Limerick was 1 from enteric fever ; and of 5 deaths recorded in Wexford 1 was from whooping-cough, a disease which also caused 1 of 4 deaths from all causes registered in Clonmel.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock and Kingstown. The population of the Area is 399,000.

In the Dublin Registration Area the births registered during the week ended February 24, 1917, amounted to 179—77 boys and 102 girls, and the deaths to 216—110 males and 106 females.

DEATHS.

The deaths registered, omitting the deaths (numbering 11) of persons admitted into public institutions from localities outside the Area, represent an annual rate of mortality of 26.8 per 1,000 of the population. During the four weeks ended with Saturday, February 24, the death-rate averaged 25.4, and was 0.2 above the mean rate for the corresponding portions of the ten years, 1907-1916. The rate for all deaths registered during the eight weeks was 27.2, while in the corresponding period of the preceding ten years it had been 26.5.

The 205 deaths appertaining to the Area included 6 from measles, 1 from whooping-cough, 6 from influenza, and 9 from diarrhoeal diseases—all of children under two years old. In the three preceding weeks deaths from measles had numbered 4, 6 and 5; deaths from whooping-cough, 1, 0 and 1; influenza, 3, 1 and 5; and deaths from diarrhoeal diseases, 2, 1 and 2, respectively.

Tuberculosis caused 25 deaths, as against 26, 37 and 24, respectively, in the three weeks preceding. Of the 25 deaths ascribed to tuberculosis, 18 were referred to pulmonary tuberculosis, 3 to tubercular meningitis, 2 to abdominal tuberculosis, and 2 to disseminated tuberculosis.

Four deaths were caused by cancer, 2 by simple meningitis, 16 by pneumonia (10 by broncho-pneumonia, 1 by lobar pneumonia, and 5 by pneumonia, type not distinguished), 21 by organic diseases of the heart, and 30 by bronchitis.

There were 3 deaths from violence, of which 2 were caused by burns (1 of these being that of a child of under 5 years).

Among deaths of infants under one year old, 6 were ascribed to convulsions, 6 to congenital debility, and 8 to premature birth. Sixty-one of the deaths registered during the week appertaining to the Area were of children under 5 years of age, 38 being infants under one year, of whom 14 were under one month old. Sixty-two deaths of persons aged 65 or upwards were registered, including 49 deaths of persons of 70 years or upwards.

Of the 205 deaths recorded, 83 occurred in hospitals and other public institutions.

STATE OF INFECTIOUS DISEASES.

The following returns of the number of cases of Infectious Diseases notified under the "Infectious Disease (Notification)

Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," have been furnished by the respective sanitary authorities:—

TABLE I.—SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area—(viz., the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock and Kingstown), and in the Cities of Belfast, Cork, Londonderry, Limerick, and Waterford, during the week ended February 24, 1917, and in each of the preceding three weeks.

A dash (—) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	Measles	Scarlet Fever	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Diarrhoeal Diseases	Poliomyelitis	Pulmonary Tuberculosis	Total	
		Feb. 3	Feb. 10	Feb. 17	Feb. 24	Feb. 3	Feb. 10	Feb. 17	Feb. 24	Feb. 3	Feb. 10	Feb. 17	Feb. 24	Feb. 3	Feb. 10	Feb. 17	Feb. 24
City of Dublin	Feb. 3	—	—	—	—	—	—	—	—	—	—	—	—	—	5	20	
	Feb. 10	—	—	—	—	—	—	—	—	—	—	—	—	—	4	19	
	Feb. 17	—	—	—	—	—	—	—	—	—	—	—	—	—	9	12	
	Feb. 24	—	—	—	—	—	—	—	—	—	—	—	—	—	9	18	
Rathmines and Rathgar Urban District	Feb. 3	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Feb. 10	2	—	—	—	—	—	—	—	—	—	—	—	—	—	4	4
	Feb. 17	4	—	—	—	—	—	—	—	—	—	—	—	—	—	7	7
	Feb. 24	1	—	—	—	—	—	—	—	—	—	—	—	—	—	9	2
Pembroke Urban District	Feb. 3	2	—	—	—	—	—	1	—	—	—	—	—	—	—	—	3
	Feb. 10	1	—	—	—	—	—	1	—	—	—	—	—	—	—	1	1
	Feb. 17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
	Feb. 24	2	1	—	—	—	—	1	—	—	—	—	—	—	—	2	6
Blackrock Urban District	Feb. 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Feb. 10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Feb. 17	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Feb. 24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Kingstown Urban District	Feb. 3	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
	Feb. 10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Feb. 17	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
	Feb. 24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
City of Belfast	Feb. 3	—	—	—	—	6	—	—	3	—	—	—	—	—	—	2	17
	Feb. 10	—	—	—	—	14	—	—	10	—	—	3	—	—	—	1	31
	Feb. 17	—	—	—	—	8	—	—	4	—	—	3	—	—	—	—	19
	Feb. 24	—	—	—	—	8	—	—	2	—	—	5	—	—	—	—	25
City of Cork (b)	Feb. 3	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	2
	Feb. 10	—	—	—	—	2	—	—	1	—	—	2	—	—	—	—	7
	Feb. 17	—	—	—	—	1	—	—	1	—	—	2	—	—	—	—	4
	Feb. 24	—	—	—	—	1	—	—	1	—	—	2	—	—	—	—	4
City of Londonderry	Feb. 3	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
	Feb. 10	—	—	—	—	3	—	—	—	—	—	1	—	—	—	—	4
	Feb. 17	—	—	—	—	2	—	—	—	—	—	1	—	—	—	—	3
	Feb. 24	—	—	—	—	3	—	—	—	—	—	1	—	—	—	—	4
City of Limerick	Feb. 3	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
	Feb. 10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Feb. 17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Feb. 24	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
City of Waterford	Feb. 3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Feb. 10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Feb. 17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
	Feb. 24	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1

^a Continued Fever. ^b One case of varicella was reported during the week ended February 10th.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Table II. exhibits the number of cases of certain infectious diseases treated in the Dublin Hospitals during the week ended February 24, 1917, and the number under treatment at the close of each of the three preceding weeks.

TABLE II.

Diseases	No. of Cases in Hospital at close of week ended			Week ended February 24				No. under treat- ment at close of week
	Feb. 3	Feb. 10	Feb. 17	No. admitted	Dis- charged	Died		
Enteric Fever	24	25	26	4	6	—	—	24
Typhus —	—	—	—	1	—	—	—	1
Small-pox —	—	—	—	—	—	—	—	—
Measles —	25	36	61	9	26	1	—	43
Scarlet Fever	43	41	39	7	7	—	—	39 ^a
Diphtheria —	12	14	18	3	2	—	—	19
Pneumonia —	19	24	24	21	10	5	—	30

^a Exclusive of 8 convalescent patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

From this Table it appears that the cases admitted to hospital during the week ended February 24, and the cases under treatment at its close, respectively, were as follows :— Enteric fever 4 and 24 ; typhus, 1 and 1 ; measles, 9 and 43 ; scarlet fever, 7 and 39 (exclusive of 8 convalescents at Beneavin, the Convalescent Home of Cork Street Hospital) ; and diphtheria, 3 and 19. Twenty-one cases of pneumonia were admitted during the week, and 30 remained under treatment at its close. Of the deaths in hospitals during the week 1 was from measles, and 5 were from pneumonia.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, February 24, in 96 large English towns (including London, in which the rate was 23.3), was equal to an average annual death-rate of 22.5 per 1,000 persons living. The average rate for 16 principal towns of Scotland was 19.6 per 1,000, the rate for Glasgow being 19.9, and that for Edinburgh 21.5.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell-Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended February 24. From this report it appears that of 58 cases notified 10 were of scarlet fever, 10 of diphtheria, 19 of pulmonary tuberculosis, 11 of other forms of tuberculosis, 4 of erysipelas, 3 of cerebro-spinal fever, and 1 of puerperal fever. Among the 428 cases of infectious diseases in hospital at the close of the week were 142 of pulmonary tuberculosis, 96 of scarlet fever, 65 of diphtheria, 56 of measles, 24 of whooping-cough, 7 of erysipelas, 6 of cerebro-spinal fever, 1 of puerperal fever, and 1 of enteric fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1917.

Mean Height of Barometer,	-	-	-	30.147 inches.
Maximal Height of Barometer (8th, at 9 a.m.),				30.549 ,,
Minimal Height of Barometer (20th, at 9 a.m.),				29.566 ,,
Mean Dry-Bulb Temperature,	-	-	-	37.3°.
Mean Wet-Bulb Temperature,	-	-	-	35.8°.
Mean Dew-point Temperature,	-	-	-	33.8°.
Mean Elastic Force (Tension) of Aqueous Vapour,				.194 inch.
Mean Humidity,	-	-	-	85.9 per cent.
Highest Temperature in Shade (on 17th),	-			51.9°.
Lowest Temperature in Shade (on 6th),	-			20.1°.
Lowest Temperature on Grass (Radiation) (6th),				16.2°.
Mean Amount of Cloud,	-	-	-	59.0 per cent.
Rainfall on (11 days),	-	-	-	1.702 inches.
Greatest Daily Rainfall (on 19th),	-	-	-	0.938 inch.
General Directions of Wind,	-	-	-	W., E.

Remarks.

February, 1917, proved to be the third cold month in succession of a very severe winter—the most severe experienced since that of 1895, twenty-two years ago. Very low temperatures held during the first half of the month. The milder weather of the latter half gradually spread southwards from high latitudes accompanying the oceanic and westerly winds of shallow atmospherical depressions travelling eastwards and skirting the northern face or edge of an anticyclone.

On the evening of Saturday, the 3rd, a considerable fall of snow took place in Dublin, and the ground remained snow-covered until the 7th inclusive. The week ended the 10th was the coldest of the whole winter, the mean temperature in the screen even in the City of Dublin being as low as 31.4° . On Tuesday, the 6th, the thermometer fell to 20.1° in the screen and to 16.2° in the garden of 40 Fitzwilliam Square. On that day a minimum of 11.8° was recorded at the Royal Botanic Gardens, Glasnevin, and the thermometer sank to 8.1° at the Ordnance Survey Office, Phoenix Park. In England the cold was even more intense :— 4° F. (that is, 36 degrees of frost) being reached at Benson, near Dorchester, Oxfordshire. After this, day temperatures became higher and intermittent thaws took place ; but there was still sharp freezing at night until the 17th, on which day the thermometer rose in Dublin to 51.9° , the highest reading of the month.

The gradual and general moderation in the severity of the weather in the week ended the 17th coincided with a tendency of the wind to veer to southerly points. The upper clouds were the first to show the change of direction in the air-currents.

The frosts finally broke up in Ireland on Monday, the 19th, when a very heavy rainfall took place in Dublin—55 per cent. of the total rainfall for the month (0.938 inch) falling between 5 p.m. of the 19th and 9 a.m. of the 20th. In the following 24 hours there was an additional measurement of 0.399 inch, so that in the rainstorm the total precipitation was 1.337 inches.

The closing days of the month were chiefly fine and mild, giving a promise of spring.

A marked feature in the weather of February was the

stillness of the air and the almost complete absence of fresh or strong winds from any quarter of the compass.

In Dublin the mean temperature (38.6°) was 3.8° below the average (42.4°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 37.3° . In the fifty years ending with 1915, February was coldest in 1895 (M. T. = 34.2°), and warmest in 1903 (M. T. = 47.5°). In 1914 the mean temperature was 46.0° ; in 1915 it was 40.1° , and in 1916, 40.8° .

The mean height of the barometer was 30.147 inches, or 0.292 inch above the average value for February—namely, 29.855 inches. The mercury rose to 30.549 inches at 9 a.m. of the 8th, and fell to 29.566 inches at 9 a.m. of the 20th. The observed range of atmospheric pressure was, therefore, 0.983 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 37.3° , or 0.3° above the value for January, 1917. Using the formula *Mean Temp. = Min. + (Max. — Min.) × .50*, the M. T. is 38.6° , compared with a thirty-five years' (1871–1905) average of 42.4° . On the early morning of the 6th the thermometer in the screen fell to 20.1° —wind, calm; on the 17th it rose to 51.9° —wind, S.E. The minimum on the grass was 16.2° , on the 6th.

The rainfall was 1.702 inches, distributed over 11 days. The average rainfall for February in the thirty-five years, 1871–1905, inclusive, was 2.010 inches, and the average number of rain-days was 15. The rainfall, therefore, and also the rain-days were below the average. In 1883 the rainfall in February was large—3.752 inches on 17 days; in 1879 also 3.706 inches fell on 23 days. On the other hand, in 1891, only 0.042 inch was measured on but 2 days. In 1913, only 0.602 inch fell on 12 days; but in 1915 the rainfall amounted to 3.279 inches on 20 days, and in 1916, it was 3.559 inches on 26 days.

Slight fog occurred on the 4th and 20th. The amount of cloud—59.0 per cent.—was markedly under the average—66 per cent. High winds were almost entirely absent. The ground remained covered with snow from the 3rd to the 7th inclusive. Snow fell on the 3rd and 5th; hail on the 1st and 4th. There was a lunar halo on the 7th. Large sunspots were observed on the 13th.

The temperature reached or exceeded 50° in the screen on 3 days, and fell to 32° in the screen on 12 nights. The minimal on the grass were 32° or less on 17 nights, compared with every night in 1895. The thermometer failed to rise above 33.0° in the screen in the daytime on the 5th. The highest minimum was 43.9° on the 20th. The mean maximum was 42.8° , the mean minimum was 34.3° .

In Dublin the rainfall of 1917 up to February 28th amounted to 2.989 inches on 30 days, compared with 3.481 inches on 31 days in 1914, 5.374 inches on 38 days in 1915, 4.957 inches on 42 days in 1916, and a thirty-five years' (1871–1905) average of 4.220 inches on 33 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. T. Mulock Bentley reports that the mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 38.8° . The arithmetical mean of the daily maximal and minimal temperatures was exactly 39.0° . The screened thermometers rose to 53° on the 17th, and fell to 18° on the 6th. On the latter day the grass minimum was 10° . Rain or snow fell on 11 days to the amount of 1.575 inches, the greatest fall in 24 hours being 0.898 inch on the 19th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 60.2 hours, of which 7.0 hours occurred on the 15th. The mean daily sunshine was 2.2 hours. The mean temperature of the soil at 9 a.m. was 38.1° at a depth of 1 foot; at a depth of 4 feet it was 40.9° . The mean height of the barometer was 30.168 inches, the range being between 30.567 inches at 9 a.m. of the 8th and 29.607 inches at 9 a.m. of the 20th.

The rainfall at Ardgillan, Balbriggan, Co. Dublin (210 feet above sea-level), measured by Captain Edward Taylor, D.L., was 1.82 inches on 13 days. The amount was 0.167 inch less than the average, and the rain-days were 2 in defect. The largest fall in 24 hours was 0.72 inch on the 19th. From January 1 to February 28, inclusive, 3.54 inches of rain fell on 31 days—the difference from the average fall being 0.831 inch in defect, while the rain-days were 2 below the average.

The thermometers in the shade rose to 50.2° on the 23rd, and fell to 23.6° on the 5th. The extremes of February rainfall at Ardgillan were 4.04 inches on 19 days in 1904 and 0.46 inch on 9 days in 1909.

Mr. T. Bateman reports that the rainfall at The Green, Malahide, Co. Dublin, was 1.495 inches on 11 days. The greatest fall in 24 hours was 0.72 inch on the 19th. The average rainfall (in the 12 years 1903-1915) of February at Malahide was 1.674 inches.

Mr. J. Pilkington recorded a rainfall of 2.24 inches on 15 days at Stirling, Clonee, Co. Meath, situated 231 feet above sea-level. The heaviest fall in 24 hours was 0.67 inch on the 20th. The rainfall at Stirling since January 1, 1917, amounts to 3.97 inches on 33 days.

At the Ordnance Survey Office, Phoenix Park, Dublin (height, 155.3 feet above sea-level), rain fell on 12 days to the amount of 1.93 inches, the greatest measurement in 24 hours being 0.738 inch on the 19th. The total duration of bright sunshine was 79 hours, the largest amount recorded on one day being 7.7 hours on the 15th.

At Cheeverstown Convalescent Home, Clondalkin, Co. Dublin, Miss Mary Love measured 1.31 inches of rain on 11 days, the maximal fall in 24 hours being 0.61 inch on the 20th. Snow fell on the 3rd and 4th, hail on the 15th.

The rainfall at 89 Anglesea Road, Donnybrook, Dublin, is given by Mr. F. Dudley Joynt as 1.555 inches on 9 days, 0.920 inch having been measured on the 19th. Since January 1, 2.830 inches of rain have fallen at this station on 27 days. The thermometer rose to 53° on the 23rd and fell to 20° on the 5th.

Dr. Arthur S. Goff reports that at Belfort House, Dundrum, Co. Dublin, rain fell on 10 days to the amount of 1.11 inches, the greatest daily fall being 0.40 inch on the 20th. In the 10 years, 1901-1910, the average rainfall in February at Dundrum was 2.232 inches on 15 days. The temperature in the shade ranged from 54° on the 17th to 23° on the 6th. The mean temperature in the screen was 38.6° . Snow fell on the 3rd.

Mr. W. J. McCabe, the observer for the Right Hon. Laurence Waldron, D.L., at Marino, Killiney, recorded 1.27 inches on

10 days ; on the 19th 0.56 inch was measured—the maximal daily fall in the month.

Mr. Harold Fayle sends the following abstract of his observations at Sandford Lodge, Ranelagh, Dublin :—

Mean corrected Height of Barometer,	-	30.152 inches.
Highest corrected Reading (8th, 9 hours),	-	30.54 ,,
Lowest corrected Reading (20th, 9 hours),	-	29.57 ,,
Mean Dry-Bulb Temperature,	-	37.4°.
Mean Wet-Bulb Temperature,	-	36.0°.
Mean Maximal Temperature, -	-	43.6°.
Mean Minimal Temperature, -	-	33.0°.
Arithmetical Mean Temperature,	-	38.3°.
Highest Temperature in Screen (17th),	-	54°.
Lowest Temperature in Screen (6th),	-	16°.
Lowest Temperature on Grass (6th), -	-	8°.
Nights of Ground Frost,	-	18.
Rainfall (on 9 days), -	-	1.57 inches
Greatest Daily Rainfall (19th),	-	0.89 inch.
Mean Amount of Cloud,	-	61 per cent
Days of Clear Sky, -	-	5.
Days of Overcast Sky,	-	11.
Very little Wind.		

Dr. John H. Armstrong and Miss Armstrong report that at Coolagad, Greystones, Co. Wicklow, the rainfall was 1.27 inches on 12 days. The heaviest fall in 24 hours was 0.55 inch on the 19th. Snow fell on the 3rd. Sleet fell on the 12th. In February, 1916, the rainfall was 4.63 inches on 25 days. The highest temperature was 52° on the 21st, the lowest was 27° on the 4th and 5th.

At Auburn, Greystones, Co. Wicklow, Mrs. Sydney O'Sullivan measured 1.10 inches of rain on 10 days, the maximal fall in 24 hours being .49 inch on the 19th. In February, 1915, the rainfall at this station was 4.57 inches on 18 days, and in February, 1916, it was 4.47 inches on 25 days.

At the Royal National Hospital for Consumption for Ireland, Newcastle, Co. Wicklow, Dr. F. O'B. Kennedy, Resident Medical Officer, measured 1.31 inches of rain on 13 days, the largest daily measurement being 0.42 inch on the 19th. The mean temperature at the Hospital was 38.4°, the extremes

being—highest, 52° on the 23rd ; lowest, 21° on the 6th. The mean maximum was 44.2°, the mean minimum, 32.5°.

The Rev. Canon Arthur Wilson returns the rainfall at the Rectory, Dunmanway, Co. Cork, at 2.72 inches on 11 days. This quantity was 2.56 inches below the average for February—namely, 5.28 inches. The heaviest falls in 24 hours were 0.68 inch on the 16th, and again on the 19th. Only 0.03 inch fell in the first 14 days—*i.e.*, 0.02 inch (melted snow) on the 4th and 0.01 inch on the 12th. The heaviest frosts in this very severe winter occurred between the 2nd and 11th. Skating on the large lake (which is very unusual) was possible on the 10th and 11th. A thaw began with warm sunshine on the morning of the 12th. It became very mild on the 15th, and the 17th and the 24th were very warm sunny days. In 1916, cold hard weather set in on the 20th, after a rainfall of 7.30 inches in the first 19 days. In February, 1914, there were 11.03 inches of rain, and 11.10 inches in 1915. February, 1905, had 2.75 inches ; 1907, 3.37 inches ; and 1908, 3.01 inches. Slight snow-showers occurred on the 1st, 3rd and 4th.

PERISCOPE.

A QUESTION FOR OBSTETRICIANS AND MEDICAL JURISPRUDENTS.

WE have been requested to publish the following letter from Dr. Fredk. Smith, of 138 Harley Street, W., London :—

“ DEAR SIR,—I wish to establish, if possible, as a fact whether there is or is not a case of ‘ a woman aged 48 or over having a living or viable child ’ recorded *on evidence other than the mere ipsa dixit* of the woman as to her age. Might I enlist the assistance of your readers to enable me to settle the point by reporting to me any cases within their knowledge.

“ I am of course aware that there are a good many reported on the evidence of the mere statement of the woman that she was 48 or older ; but as the Registration of Birth Act is now over 50 years old it should be possible to get the date of parturition and the date of the mother’s birth, both officially recorded, and it is cases of this nature I am anxious to obtain for a forthcoming edition of ‘ Taylor’s Medical Jurisprudence.’

“ Yours truly,

“ FRED. J. SMITH.”

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

MAY 1, 1917.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*High Explosives. T. N. T.: its Toxic action in Munition Workers. Detection of T. N. T. in Urine. With Experiments.*^a By WALTER G. SMITH, M.D.; Ex-President, R.C.P.I.; Ex-President, Royal Academy of Medicine in Ireland; Physician to Sir P. Dun's Hospital.

THE Twentieth Century, even in its youth, is a witness to rapid and extraordinary advances made in all branches of Chemical Science. A new epoch has unfolded itself. What a change when we now know that the atom, the foundation stone of chemistry, is not an immutable indivisible entity, but is a complex microcosm liable to sudden and forceful disintegrations, and forming a storehouse of vast potential energy.

Surely we may hope that Chemistry will soon come into its own, secure the ungrudging support of Governments, and infiltrate the general public with a sense of its fundamental importance.

This colossal and lurid World War has been described—not untruthfully—as largely a war of applied chemistry.

^a Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland on Friday, April 13, 1917.

In this sphere of activity chemistry has been enlisted both lawfully and unlawfully. Lawfully, for the production of munitions of war and for the protection of human life in coping with the deadly chemicals employed by our adversaries. Unlawfully, and barbarously, for the maiming and torturing of humanity by death-dealing poison gases, by the poisoning of wells, and by other measures of ferocity in defiance of all hitherto recognised canons of international practice.

From sheer necessity—greatly against the grain—the British and their Allies have been compelled to adopt certain measures of offence and of reprisal which are foreign to their nature.

As examples of gases used as asphyxiating agents may be mentioned chlorine, bromine vapour, phosgene gas (COCl_2), and sulphur dioxide (SO_2).

In addition to these familiar substances there are now employed a number of complex organic compounds which give rise to offensive and toxic gases, and combine the properties of being asphyxiating and lacrymatory. It is unnecessary to give their names or formulae.

One thought that carries some comfort with it is that while war makes men devils it also creates heroes and saints.

Furthermore, the war has led us to recognise some new and serious occupational diseases arising from the novel chemicals introduced. And once again malingering has been favoured by a curious property of one at least of the modern explosives.

In this latter connection I refer to picric acid. Soldiers have learned to simulate jaundice by swallowing picric acid, which turns the urine orange-yellow, independent of bile pigment, and tinges the conjunctiva yellow, properties not possessed by any other drug known to me.

Some time ago I made a few experiments on myself. I took, within ten hours, three powders of two grains of picric acid, in cachets, without any harm ensuing. Yet it is stated (Sollmann, *Text-book of Pharmacology*, 2nd edit.,

1906) to be very poisonous, causing destruction of red corpuscles, nephritis, convulsions, and death through paralysis of respiration. 0.06–0.60 grm. is said to be fatal to rabbits and dogs.

Ammonium picrate has been recommended in malarial fevers, in doses of $\frac{1}{8}$ to $\frac{1}{2}$ gr.

The picric urine assumed an orange yellow colour, and remained sweet for a number of days. It was free from albumen and bile pigment.

Mr. E. Werner recognised that my conjunctivæ were tinged yellow. This soon passed off, and I was none the worse for the venture.

To detect picric acid in urine, acidify and extract with ether; evaporate, and apply the tests for picric acid to the residue—*e.g.*, dyeing wool yellow.

I repeated these observations on the 11th of April, and took again 6 grs. of picric acid, in 2 gr. doses, at intervals of some hours. At 9 30 p.m.—*i.e.*, seven hours after the second dose—the urine was of a distinctly orange colour. The colour deepened on the 12th.

The urine was acidified with H_2SO_4 and extracted with ether. The ethereal solution was evaporated to dryness, and then dissolved in water, and a small skein of white wool left in it. The wool was stained pale yellow.

Let me now turn to the main subject of my communication—viz., High Explosives.

The term "High Explosives" is of quite recent origin. The velocity of explosion in them is about 500 times greater than that of a "Low Explosive"—*e.g.*, gunpowder. It denotes compounds rich in N which, when detonated, furnish suddenly an enormous volume of heated gas, from 10,000 to 15,000 times the volume of the explosive. The amount of energy which will become available when explosion occurs depends mainly upon the percentage of N in the compound. All explosives contain N, a singular fact when we call to mind the chemically and physiologically inert properties of ordinary free N, which forms, as we all know, about 80 per cent. of atmospheric air.

The first explosive prepared by man was gunpowder, some form of which was used in the battle of Crecy in 1346, when, as the old chronicle relates, the guns "threw little balls of iron to frighten the horses." For a long time the employment of gunpowder was limited to cannon and muskets, and nearly 200 years passed before it was utilised for small arms—*i.e.*, pistols.

After this momentous innovation in warfare the history of explosives is a blank for nearly 500 years, and no new explosive was invented.

The starting point of modern explosives was made by a Frenchman, Braconnot of Nancy, in 1832. He prepared explosive nitro-compounds by the action of HNO_3 on starch, and wood-fibres—*i.e.*, from carbohydrates.

In 1845, Schönbein, of Basle, discovered guncotton. A year later (1846) a most important advance was made by an Italian chemist, Ascanio Sobrero, who discovered nitroglycerin, or, as he called it, pyroglycerin. But it was not until 1863 that nitroglycerin was brought into the sphere of practical utility by a Swede, Alfred Nobel—the founder of the munificent Nobel prizes.

After many experiments he found that by mixing nitroglycerin with *Kieselguhr* (a siliceous infusorial earth) a plastic and absorbent product was obtained which was safer to handle and more manageable. This mixture soon became universally known as dynamite, or giant powder, as the Americans call it.

Millions of tons of dynamite were used in the construction of the great Panama Canal. Likewise for the Suez Canal, and in the excavation of the Simplon and other long tunnels; in mines, quarries, &c.

In 1905, the steamer *Chatham* sank in the Suez Canal. Among other things the ship was laden with 100 tons of dynamite. Divers went down and placed electric detonators in position. The gigantic explosion forced a jet of water to rise 1,500 feet in the air, and a hole 73 feet in depth was punched out of the canal bed.

Picric acid was discovered nearly 150 years ago, but it

was not until 1867 that it was employed as a blasting powder mixed with NaNO_3 and K_2CrO_4 .

A mixture of picric acid and collodion compressed and molten is known as melinite, or lyddite, and was extensively used in the Boer War.

About twenty years later (1886) an entirely new departure was put forward by a French chemist, as "smokeless powder," and soon after, Sir Frederick Abel and Sir James Dewar introduced us to cordite.¹

Cordite is a mixture of guncotton and nitroglycerin dissolved in acetone, and thickened by the addition of 5 per cent. of vaseline. It is largely used in British ordnance.

The outcome of these successive discoveries is that the old black gunpowder, which held its ground for more than six centuries, has been practically superseded in military service, and may, before long, become a matter of history only, at least in military warfare.

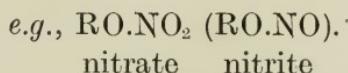
What are the sources of High Explosives ?

The answer is simple. They are derivatives of the two great groups into which most organic compounds fall. I refer to (I.) The carbohydrates (fatty : aliphatic group), and (II.) The hydrocarbons of the aromatic group.

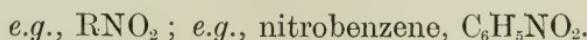
The organic products employed as explosives are either (a) true nitrates, or (b) nitro-compounds.

The difference between them is important, and consists in this :—

In an organic nitrite or nitrate (true ester) the nitric (nitrous) radical is attached indirectly to the hydrocarbon nucleus through the medium of oxygen—

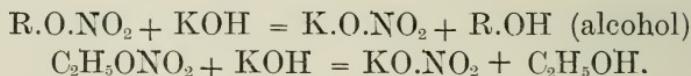


In a nitro-compound the substituting NO_2 group is directly attached to the hydrocarbon radical—



These nitro-compounds are more stable, and are not

saponifiable by alkalies, whereas organic nitrates, being alcoholic salts or esters, are readily saponified.



Inorganic nitrates—*e.g.*, KNO_3 or NH_4NO_3 —are often added in order by supplying oxygen to intensify the effect of high explosives. Similarly, KClO_3 or KClO_4 may serve, as an addition to one of the aromatic explosives—*e.g.* Rack-a-rock : cheddite.

Of the carbohydrate group, the chief individuals which concern us are cotton, or cellulose $(\text{C}_6\text{H}_{10}\text{O}_5)_n$ and glycerin $\text{C}_3\text{H}_5(\text{OH})_3$.

(a) By the graduated action of HNO_3 upon cellulose the degree of nitration can be so arranged as to yield products whose proportion of N ranges between 6 per cent. to 13.5 per cent. N. Pyroxylin, B. P. is Di-nitro-cellulose. Guncotton is Tri-nitro-cellulose. The term *nitro* is inapplicable to these bodies, for they are true nitrates—*i.e.*, esters. Practically, most violent propellants contain nitro-cellulose (guncotton) wholly or partly gelatinised. All smokeless powders consist largely of nitro-cellulose in some form. Guncotton, even when moist, can be exploded by mercury fulminate just as readily as when it is dry. Used for charging torpedoes and sea-mines.

(b) Glycerin, by the action of concentrated HNO_3 , is transformed into nitroglycerin, a heavy, oily-looking liquid. An alcoholic solution of nitroglycerin, 1 per cent., constitutes the Liquor Trinitrini B. P.

The term nitroglycerin is a chemical misnomer, for it has been shown that it is really a true ethereal nitrate $\text{C}_3\text{H}'_5(\text{ONO}_2)_3$, and is readily broken up by alkalies—*i.e.*, saponified like other esters.

Gelignite is a mixture of nitroglycerin, nitrocellulose, wood pulp, and KNO_3 .

Most of us will remember that it was used by the rebels in the Dublin outbreak, April, 1916, and a quantity of it was found in the G.P.O.

Among the aromatic group we recognise three important parents of explosives, viz. :—

	Derivatives
Benzene (Benzol) C_6H_6	Trinitrobenzene, sometimes used for filling shells ; also trinitrocresol and trinitro- naphthalene Nitro-benzenes (mono-di-tri) <i>e.g.</i> , $C_6H_5NO_2$
Toluene (Toluol) $C_6H_5CH_3$ methyl-benzene	Tri-nitro-toluene T.N.T. $C_6H_2(NO_2)_3 CH$
Phenol (carbolic acid) C_6H_5OH	Picric acid or Tri-nitro-phenol $C_6H_2(NO_2)_3 OH$

Derivatives of aniline have also been used—*e.g.*, tetranitraniline and tetranitromethylaniline (tetryl.).

The metallic picrates are more explosive than the free acid.

Lead picrate detonates suddenly and violently when heated. (Experiment shown.)

Picric acid is the oldest organic dyestuff, and colours animal tissues and fibres, such as silk or wool, but not cotton.

This dye test is useful for the detection of picric acid in organic fluids. (Experiment shown.)

Although picric acid solution is somewhat extensively used as a dressing for burns I have not heard of any ill effects ensuing. The only harmful result I can find which appears to have been due to picric acid is a case of a severe burn on the foot of a young infant. It was dressed with a dusting powder, containing from 7 to 17 per cent. of the acid. This was followed by vomiting and diarrhoea. T. 100° F.; P. 100 to 150. A general erythema developed, and the child died on the twenty second day after the accident.—Martindale, *Extra Pharm.*, 16th edit., p. 64.

Within recent times picric acid and picrates have

receded in importance as explosive agents, and T.N.T. has come into the foreground, and has replaced picric acid as a filling for shells.

The reasons for the substitution are that T.N.T. has a lower M. P., is more stable, is insensitive to ordinary shock, and, being free from acidic properties, it does not attack metals or their oxides.

Furthermore, it is cheaper than picric acid, and is less poisonous.

T.N.T.

It is obtained by the graduated action of HNO₃ upon toluene, and is a true nitro-compound. Occurs in small yellow prismatic crystals. Insoluble in water; soluble in ether, acetone, and fixed oils. It is quite safe to handle. When heated in the open, it suddenly takes fire, without detonation. (Experiment shown.)

PHYSIOLOGICAL ACTION.

Absorption.—It can be absorbed by the skin, and is liable to cause dermatitis, followed by desquamation. Some persons are more susceptible than others. In my own case, I more than once rubbed in an ethereal solution on the back of my hand, and thereby caused slight punctiform erythema. I several times rubbed into the palms T.N.T. and liquid paraffin without result.

From observations of 1,100 workers Mr. Barnes considers that the main channel of absorption is the skin, especially if greasy, and the incidence of cases has been where the material was used, rather than where it was made.

Professor Benjamin Moore provoked toxic symptoms in himself by rubbing an oily preparation of T.N.T. into his palms. In a factory he had breathed fumes and dust systematically, but had not induced any symptoms of poisoning.

Digestive Troubles.—Munition workers who handle T.N.T. are liable to gastritis, abdominal pain, and persistent constipation.

Blood Changes.—T.N.T. absorption induces cyanosis and haemolytic changes, and meta-haemoglobin is demonstrable. The alterations in the blood are minutely described by Dr. M. J. Stewart in *The Lancet*, Jan. 27, 1917.

Liver.—T.N.T. brings about serious mischief in the liver. The lesion appears to lie somewhere between a subacute yellow atrophy and an ordinary multilobular cirrhosis of irregular distribution. Jaundice appears, and ascites sometimes supervenes, and haemorrhages occur in various situations, in both skin and viscera.

Urine is dark, and may contain albumen as well as bile. Crystals of leucin and tyrosin have also been observed.

In 1916 about 50 deaths had occurred from toxic jaundice, a mortality among those exposed of 0.05 per cent. When death occurs it usually takes place about three weeks after the first appearance of jaundice, and is preceded by delirium and coma.

TESTS FOR T.N.T.

(a) *In the Free State* (M. P. 80° C.).—A weak solution (ethereal) diluted with water strikes a deep red with KOH, preferably in alcoholic solution. (Experiment shown.) Di-nitro-toluene yields a blue colour with KOH.

(b) *In the Urine.*—T.N.T. may be recovered unchanged from the faeces, but does not exist in the free state in the urine, except, perhaps, in minute amount. To detect it in urine, Webster's test is convenient (*Lancet*, Dec. 16, 1916). Add to urine (12.5 cc.) an equal volume of dilute H₂SO₄. Pour the mixture into a separating funnel. Add about half its volume (10 cc.) of commercial ether. Shake up well and allow to settle. After a few minutes draw off the lower stratum of urine and acid. Now add about twice its volume (25 cc.) of tap-water to the ethereal solution, shake up again, and, after settling, run off the water. Finally, let the ethereal solution flow into a test tube and apply the KOH test, which at once strikes a bright red. (*Lancet*, Dec. 16, 1916).

In order to verify this test I made some experiments on myself.

On Sunday, March 18, I took three doses of 1 gr. each, of T.N.T., with a little sugar, at intervals of some hours—viz., 11.15 a.m., 1.5 p.m., and 6.30 p.m.

That night and next morning I collected some urine and tested the mixed specimen as above.

The urine was high-coloured, almost orange tint ; acid in reaction, free from albumen, and gave no reaction with the iodine and chloroform test for bile. The ethereal extract from the acidified urine gave a bright red with the alcoholic solution of KOH.

The fresh urine, before treatment with H_2SO_4 , gave scarcely any reaction with KOH ; very slightly deepened in colour, and slowly showed a pale red. A little T.N.T. added to normal urine reacts at once to the potash test, applied directly, or to the ethereal extract.

I repeated these observations yesterday, April 12, and took three doses of T.N.T., 1 gr. each, at 4.30 p.m., 9.30 p.m. and 10.30 p.m., with the same results.

ART. XXII.—*Tetanus.*^a By JOHN S. M'ARDLE, M.Ch. (*Hon. Causâ*), R.U.I. F.R.U.I.; F.R.C.S.I.; Professor of Surgery, National University of Ireland; Senior Surgeon, St. Vincent's Hospital; Consulting Surgeon, National Hospital, Holles Street, and Children's Hospital, Temple Street, Dublin. (Illustrated.)

In 1881 I made my first endeavour to deal with tetanus, of which we then knew very little. For years, owing to the courtesy of the late L. Hunter, V.S., I had ample opportunity of seeing cases of tetanus in the lower animals. Every drug that seemed to offer any chance of help we employed extensively, and, sad to relate, with poor results.

The study of tetanus received a great impulse in 1884, when Rattone proved the characteristic symptoms of lock-

^a The substance of a Clinical Lecture.

jaw by injecting animals with the discharge from a pustule in a case of tetanus.

It was not, however, until 1889 that the actual organism which occasions this disease was discovered by Kitasato, who, later on with Behring, 1890, proved that it was possible to immunise animals against tetanus.

Thus within our time yet another terrible disorder has been brought under control. We must admit that this control is not so complete as in the case of diphtheria, but the opportunities for the study of the subject differ widely in the two cases. In my last lecture I gave you a *résumé* of our knowledge of curarin in the treatment of tetanus. To-day I wish to discuss the subject on a wider basis, and to give you more particulars of the general treatment of this disorder. Before discussing the modern treatment of tetanus I wish to call your attention to a very important chart, Fig. 1, which shows how, in skilled hands, we have almost arrived at a mastery of this dread disorder. The anti-toxin now used (of which the Pasteur Institute supplies the most reliable type) is accountable for the low mortality. In the beginning of the war the supply of anti-toxin was deficient, and the chart shows that the occurrence of lock-jaw amongst the wounded was considerable. Later, when the serum ran short, an alarming increase in the number of cases occurred. In the following month, when the supply became ample, a remarkable fall in numbers resulted, dropping to nil in January. Since then there has been no recurrence worth mentioning. This picture should convince you of the necessity of having at hand a supply of tetanus anti-toxin, just as every wise practitioner includes in his armamentarium anti-diphtheritic and other serums.

You have seen during the term many serious cases recover which in my early days would certainly have proved fatal. It behoves you, therefore, to study with much exactitude the details of modern methods. You

should possess a knowledge of the various germ-enemies of the human race, so that being aware of their characteristics you may efficiently control their action.

Professor McWeeney has kindly put into words for me, with his characteristic brevity and clearness, the life-history of the tetanus germ.

" The bacillus of tetanus is a thin, rod-like organism, a little longer than the tubercle bacillus, and tends to grow

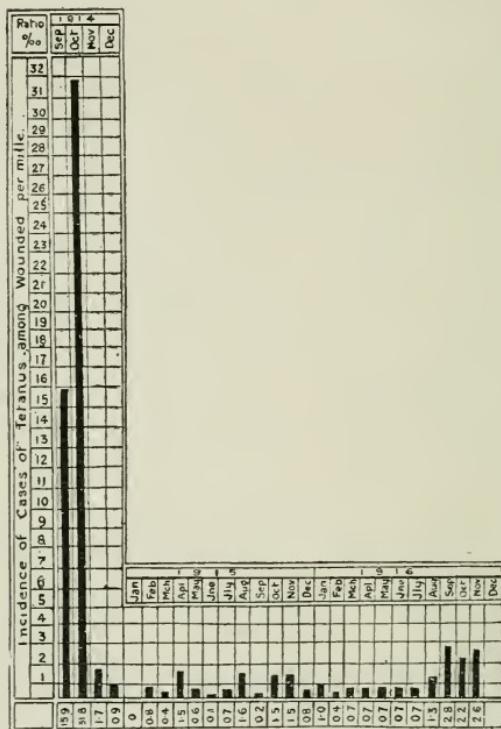


FIG. 1.

out into filaments. Its most remarkable feature is its mode of spore-formation. The spores are minute, shining globular bodies. They occur on the end of the bacillus, and give it an appearance like a little drumstick (see Fig. 2). Another remarkable point about this microbe is that it will not grow in presence of air or oxygen. In wounds it is practically always mixed with other microbes, which use up the small amount of available oxygen, and thus enable the tetanus bacillus to grow.

Owing to this peculiarity the tetanus bacillus is difficult to cultivate. It is necessary to exclude air from culture vessels or provide the bacillus with a very deep layer of nutrient medium by filling the test-tube nearly to the top. If the germs are pushed well down, they will grow near the bottom of such tubes and produce foul-smelling gas. When examined in the living state, direct out of a successful culture, the tetanus bacillus is seen to be actively motile, but it must be examined at once, as access

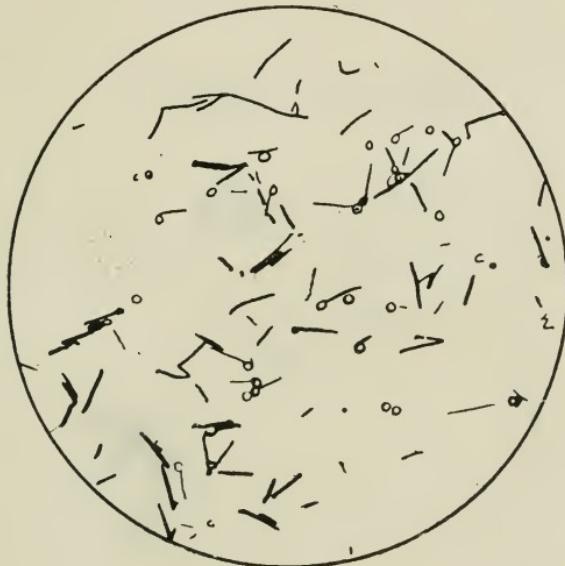


FIG. 2.

of air soon puts a stop to its movements. This power of motion it owes to a fringe of very minute hair-like processes or *flagella* (Fig. 3), with which its body is covered, and which are too delicate to be seen unless in the 'dark field' or after special staining.

"The tetanus bacillus lives and thrives in dirt, and is found more especially in stable manure and in the earth of fields and gardens manured with it. Hence wounds soiled with much earth are especially prone to give rise to tetanus, more especially if lacerated or contused and left uncleansed. Closely allied to the tetanus bacillus are several other sorts of anaërobic sporing bacilli, all found in

dirt. These are the gas bacillus, which has earned such an unenviable reputation during the present war, the bacillus of malignant oedema, the bacillus of quarter evil of cattle, and the bacillus of sausage-poisoning (Botulism). The tetanus bacillus produces disease by the production of a powerful poison—so powerful that as little as one-fifth of a milligramme or $\frac{1}{300}$ of a grain would constitute a fatal dose for a man. This poison makes its

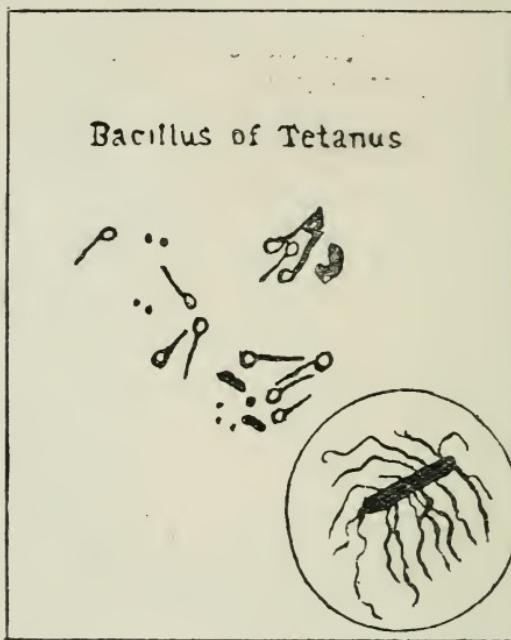


FIG. 3.

way along the nerves from the wound to the central nervous system, where it irritates the ganglion cells very much in the same way as strychnine does, and thus causes the muscles to contract, the first place where the contraction is noticeable being the lower jaw—hence the popular name for tetanus, lock-jaw. The poison of tetanus is excreted into the nutrient fluid in which the bacillus is grown. By injecting the poisonous fluid into animals, it is possible to confer on their serum the property of destroying the virulence of the poison. Such serum is called

'anti-toxin.' In order to provide an effective remedy, the anti-toxin must 'start level' with the toxin. But in actual practice what usually happens is that the anti-toxin is not given until the patient is beginning to develop lock-jaw. It is then too late. The poison has seized hold on the nerve cells. The union is indissoluble, and the patient is doomed. In order to give the anti-toxin a chance, it should be given as soon as the patient comes under treatment—or, as we say, prophylactically. Wounds so treated never give rise to tetanus, and the full recognition of this fact, due as it is to the labours of Surgeon-General Sir David Bruce, F.R.S., is one of the most important advances recently made in war-surgery. The percentage of tetanus cases fell from over 30 to nearly zero as soon as this fact was thoroughly grasped, and abundant supplies of anti-toxin provided for our troops, with instructions to medical officers to employ the remedy in all wounds that were at all grave."

Knowing now the enemy we have to deal with, we must become acquainted with its mode of entrance into the human body.

Let me at once tell you that the terms idiopathic and traumatic, in reference to tetanus, are as irrelevant as in regard to peritonitis. There is no such type of this trouble.

There must be an initial surface lesion of skin or of mucous membrane before the bacillus of tetanus can enter the nerve tracts; and, mark you, even granulation tissue resists penetration by the bacillus of tetanus, and the route by which its products take to reach its goal.

By far the greatest number of cases of tetanus arise from wounds of the extremities, the lower limbs being the more likely to afford entrance to the organism. Punctured wounds offer a favourable nurture ground for the germ owing to the fact that very little oxygen can reach the deeper structures, and that many oxygen-feeding germs are introduced at the time of injury, and soon eat up whatever oxygen was introduced at the time of

accident. In my first researches I found that wounds of the fetlock in horses were frequently followed by tetanus, and I learned early that punctures of the thenar eminence, and of the planta pedis in a man were (as looked upon by the country people) the most dangerous areas for lock-jaw infection. Of course, the explanation is very simple; in the hand the branches of the median nerve were soon bathed in the toxic products, the outcome of microbic action, while the filaments of the plantar nerves were similarly circumstanced, the foot wounds being deeply placed and devoid of air.

Tetanus arising from face wounds develop more quickly than from wounds of the extremities, and so any injuries of the nose, or cheek, especially if punctured or lacerated, should be speedily attended to by serum injection after the method I shall mention to you later.

There is a widespread belief in Ireland that if tetanus does not supervene before the ninth day after injury all is well. That granulation is well advanced by the ninth day we all know, and this explains what seemed a mystery to the ordinary observer in the early days. The influence of cold has been much spoken of in relation to tetanus, especially in war. Baron Larrey, in the early French wars, and Delorme, in the Franco-Prussian war of 1870, noted the fact that cold increased the number of cases occurring in those wounded and exposed thereto. It must be remembered that the exposure was in cultivated areas, where the bacillus of tetanus flourishes, and so the war wounds must have been impregnated with organisms. The cold could act only as a devitalising agent, rendering the tissue resistance imperfect and the general vitality low. As a cause of tetanus, we now know that only one thing can produce that grave disease, and that is the organism which I have shown you in Fig. 2. Now, let us see how we can best deal with this fearsome and at times appalling scourge. Professor McWeeney has described

the course the poison follows to reach the central nervous system. Mind the central trouble is not the direct work of the bacillus, but of the toxin which it manufactures in the wound. That is why early amputations, when carried out away from the area of infection, have often proved successful, although tissues near the point of injury contain numerous bacilli.

The symptoms associated with acute tetanus are of a very distressing nature, for both the sufferer and attendants. (In the lower animals—especially the horse—the wistful look associated with the later stages of the disease is often the occasion of deep feeling on the part of the helpless onlooker.) Beginning with extreme restlessness, worrying nightmares, pains simulating rheumatism (these erratic pains often lead to a faulty diagnosis). Then come nocturnal delirium and severe headaches. When the nerve centres become engaged, the jaws stiffen, the head is thrown back, the abdomen hardens to board-like firmness, the back is arched—the so-called opisthotonus occurring at this stage. Profuse sweating and increased salivation take place, and clonic painless spasms follow each other, affecting even the oesophagus. The pupils contract, and often nystagmus, strabismus, and other ocular symptoms supervene. Through all this time a painfully acute consciousness is present; nothing escapes the notice of the poor sufferer, the least noise, the faintest variation of light occasioning a peculiar unrest. Risus sardonicus now appears owing to spasm of the face muscles, swallowing becomes more and more difficult, the intestinal muscles fail to overcome the spasmically contracted sphincters, then respiration becomes laboured, and urination difficult. Laryngeal spasm often closes a scene of such distress that I have often wished that a merciful unconsciousness would dull the intellect of the tetanic victim, whose mind to the last is, unfortunately, all too clear.

(To be continued.)

ART. XXIII.—*A Note on the Limitations of Vaccine Treatment.*^a By ROBERT J. ROWLETTE, M.D. (Dubl.); F.R.C.P.I.; Senior Physician to Jervis Street Hospital, Dublin.

IT is my aim in this note to sketch very briefly the place that vaccines should take in therapeutics, and to consider what may fairly be expected of vaccine treatment, and what are its limits. I am aware that the observations I have to make are obvious and even commonplace, but I have often heard them overlooked, both in public discussion and in private conversation.

It is notorious that no judgment in medical practice is more difficult than the estimation of the value of a particular method of treatment. A new method is introduced, it wins a certain amount of favour, it may become the fashion, and unless it is accompanied by some obtrusive disadvantages or dangers, many of us are convinced that the treatment is, if not "the last word," at least "a distinct advance," and we go on with it until a new fashion takes the place of the old. Our reasoning on these matters is never logical, and rarely individual. We are governed by laws—if they be laws—of herd psychology. Our conclusions are instinctive, not conscious.

This is, in part, due to the difficulty of forming a judgment of cause and effect in a highly complex set of phenomena. It is difficult or impossible to arrange a therapeutic experiment in such a way that the conclusion is irresistible. The problem is not so complicated in surgical as it is in medical treatment, since the conditions more closely approach those of scientific experiment. Nevertheless, even surgeons are not free from the influence of fashion—that is to say, from the sway of inaccurate judgments. Gastro-enterostomy, appendicectomy, colectomy, Jackson's membrane, have all had their vogue, and

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, March 30, 1917.

the muciform sac is not the exclusive specialty of an imaginary surgeon.

In every branch of Medicine we meet this difficulty of estimating therapeutic results, but in the case of vaccines the difficulty has been increased by certain more or less accidental circumstances. Vaccine treatment came to us as a gift from the laboratory. It came, therefore, with a certain scientific pedigree which had a claim on our consideration, but it was presented by men trained in laboratory methods, without clinical experience, and without the knowledge necessary for the comparison of therapeutic results. On their side, clinical workers, being unfamiliar with the technique of the preparation of vaccines, have been content to leave their administration to those who were. It has come about, therefore, that for years and, indeed, to a certain extent to the present day, vaccine treatment has remained in the hands of men of laboratory training. It is, however, clinical experience, and that only, that can seal its value.

The enthusiasm of the introducers of vaccine treatment—an enthusiasm often untempered by clinical experience—has put forward somewhat extravagant claims. These claims, misunderstood and misrepresented, led the optimistic to expect miracles. But miracles do not happen, and those who were disappointed on the one hand, and on the other those who had their prophesying of evil accomplished, agreed to declare that they had been hoaxed. The number of successes, however, was sufficient to keep up some belief in the miracles, and between the faithful and the sceptic there seemed to be no common ground. Sharp trading firms saw their opportunity, and by making impossible claims for inferior products caused both disappointment and disgust. In short, an abnormal state of mind was produced which has prevented the profession exercising a normal judgment.

We have, however, passed through both elation and depression, and we are, I hope, now in a position to judge coolly of the rightful place of vaccines in treatment.

First, as regards their place in Preventive Medicine. The experience of the present war puts beyond all question the value of preventive inoculation against the enteric diseases. Our troops have been inoculated against typhoid, but not at first against para-typhoid. We know how rare has been typhoid, although para-typhoid, hitherto regarded as a rare disease, has been, in some areas, by no means uncommon. Yet medical officers from most of the fronts have made us familiar with the grossly insanitary conditions under which the men have to live, and of the gross contamination to which much of the drinking water is subject. If our troops had to rely merely on sanitary precautions in the ordinary sense, and were not protected by inoculation, there does not seem to be any reason why they should not suffer from disease as troops suffered in South Africa, and in most other campaigns in history.

In our ordinary home-medicine we have also experience of the efficacy of preventive vaccination, particularly in the results of inoculation against recurrent catarrhs of the respiratory organs. The problem is more complicated than in the case of typhoid, in that we are dealing with infections by organisms with which we are not so familiar, and, moreover, we are dealing not with a single organism, but with several, out of which it is a matter of difficulty to select the main infective agent. We have not, therefore, as good a record of success as in inoculation against enteric, but nevertheless successes are sufficiently numerous to justify us in the hope, that with a more intimate knowledge of the bacteriology of the respiratory tract, and more particularly with the development of knowledge of a correlation between the different forms of respiratory catarrh and different species of bacteria, we may soon be in a position to judge what class of cases may be satisfactorily treated, and what class we cannot expect to influence. It must not be forgotten that the attacks of some diseases, of which the best example is, perhaps, influenza, do not appear ordinarily to confer im-

munity, or at any rate an immunity which persists for any length of time. In the case of such diseases we are not likely to produce any persistent effect by preventive inoculation.

I have dealt with the question of preventive inoculation first for two reasons. In the first place, the claims made for vaccines are admitted. But in the second, the consideration of the prevention of disease by immunisation helps us to understand what we have a right to expect from vaccines in curative treatment. Active immunisation is the training and marshalling of the protective forces of the body against a particular kind of attack. That is to say, it is an attempt to stimulate a natural process—the process by which the body naturally defends itself against bacterial invasion.

A vaccine is not a new ally in the fight between the parasite and the host, assisting the latter to destroy the former. It is only a stimulus to the body to exert to the full its natural powers of resistance and protection. Of itself it can do nothing. Although, then, one rightly speaks of vaccine treatment as specific, it is specific in quite a different way from the so-called specific action of drugs. We suppose quinine to be specific for malaria, and arsenic or mercury for syphilis, because we believe the drug in each case to exert a special destructive action on the infecting parasite. But vaccines are only active against bacteria meditately in that they stimulate the production of bodies which possess special destructive powers toward particular organisms. Vaccines are, therefore, in a sense specific only at second hand.

As the action of vaccines is merely stimulative of certain natural powers of the body, it is clear that if the body is already exhausted, if it is no longer able to produce the substances, the vaccine fails. Moreover, in cases where it does not fail, its success is proportional to the power of the tissues to respond to its call. To expect uniform success from vaccines is, therefore, as unreasonable as to

suppose that the body can never fail in its defence against attack.

It follows that the cases in which we may expect the best results of vaccine treatment are those in which (1) the body has not yet lost its natural power of resisting infection, and (2) in which there has not been great tissue-change. If the body has no power of resisting infection, the vaccine is quite inert. It is as useless as a trumpet-call in a deserted barrack-square. It is not possible to tell whether such cases really occur, nor how to recognise them if they do. We must, however, be prepared to meet them, and not to be disappointed if the inevitable happens.

The second qualification is of more practical interest. When grave tissue-changes have taken place, we cannot hope by any method of treatment either to restore lost tissue or to cause the absorption of masses of new tissue of a degenerate order. Vaccines can only produce a resistance to an infective process—they have no effect in dealing with the results of that process after the process has ceased. I do not suggest that there are not other agencies in the body at work to restore damaged tissue to the normal, but these agencies are neither helped nor hindered by vaccines. Let me take one example :—

A Fallopian tube becomes infected by, let us say, the gonococcus, and suppuration follows. While the infection lasts, its progress may be hampered or prevented by vaccine treatment. But once the gonococcus loses its vitality, vaccines give no help to the tissues in their struggle to return to the normal. Neither will vaccines cure a stricture of the urethra consequent on gonorrhœa. This is so obvious as to appear commonplace. But let us apply the same reasoning to the effects of rheumatic infection, whether on the joints or on the valves of the heart. We may reasonably hope to hamper the progress of rheumatic injury or to arrest it altogether. But if gross tissue-changes have occurred, they cannot be repaired by

vaccines. It would be as reasonable to suppose that if the invaders were to-morrow driven from the fields of Flanders, those fields would be restored forthwith to the condition in which they were three years ago. The battle may be over and the invaders destroyed, but many of the traces of battle are ineradicable, while others will persist for years. Louvain and Ypres will never be again what they were three years ago. Neither will the heart valves that have been eroded and fibrosed in the battle between the infecting cocci and the protective agencies of the body be the same again.

The question is not infrequently asked—In what class of diseases should vaccines be employed? The answer, bearing in mind the limitations I have already suggested, is—every infective disease due to bacterial origin in which the bacterial cause can be discovered. The acuteness or chronicity of the condition is beside the point, though it may have much to do with the method of administration. A similar remark applies to the question whether the disease is general or local. In every case where a fight is going on between the body and an invading bacterium there is reasonable hope that the defensive forces will be strengthened by the administration of a vaccine. But, as vaccines are specific, a correct bacteriological diagnosis is necessary. In this, vaccines are at a distinct disadvantage if contrasted with other methods of treatment. By rest, suitable food, good nursing, and relief of unpleasant symptoms, we cure, or rather assist Nature to cure, many of our patients. If before treating them, an accurate diagnosis were necessary, how many successes should we have? But if vaccines are to have any effect at all, their use must be preceded by correct diagnosis. We must be sure that we are treating with the infecting organism. Of course, if the infection be mixed, as is so often the case, we must often be content to treat with a group of organisms—*i.e.*, with a mixed vaccine, being assured that at least one element in our vaccine is specific for the infec-

tion, and that the others, if not helpful, are at least harmless.

No greater misconception can exist than the notion that vaccine treatment is incompatible with the use of other methods of treatment. On the contrary, one rarely gets the best results from vaccine treatment unless one makes full use of whatever concomitant measures his own experience or the accumulated experience of others may suggest. Few drugs are in any way inimical to the action of vaccines, and those that are are depressant to the natural resistive powers of the body, and are, therefore, contraindicated in the class of diseases in which vaccines are employed. Of these the only drug in common use is alcohol, the employment of which in septic diseases should by now be obsolete except under rare conditions. Vaccine treatment, therefore, goes side by side with treatment by drugs.

In surgical conditions, operative measures or anything else that surgical knowledge suggests should, of course, be practised when required. The only precaution to be observed is to withhold inoculations in immediate proximity to any manipulative proceedings which may give rise to auto-inoculation. Otherwise, vaccines, of course, act in their normal manner of increasing the protective power of the body.

I said at the beginning that much misjudgment of vaccine treatment by the profession has been due to the treatment being so largely committed to men unaccustomed to clinical work. It cannot, however, remain in the hands of a special class. As an important branch of therapeutics it must become familiar to every practitioner. No student can be considered to have gained a sufficient knowledge of therapeutics who has not become familiar with both the doctrines of immunity and the practice of immunisation. In this way vaccine treatment will come to take its proper place—not as something peculiar and special, but as an essential part of the treatment of infective disorders of bacterial origin.

ART. XXIV.—*Burns and Scalds as a Cause of Child Disablement and Death.*^a By SIR JOHN MOORE, M.A., M.D., M.Ch., D.P.H. Dubl.; D.Sc. (*Hon. Causā*), Oxon.; F.R.C.P.I.; Honorary Physician to H. M. the King in Ireland; Senior Physician to the Meath Hospital and County Dublin Infirmary.

JUST five years ago—on Friday, April 12, 1912, I read a paper before this section of the Academy on “Non-notifiable Diseases as a Cause of Mortality in Childhood, with Suggestions for their Control.”

The supreme value of child-life at the present grave crisis in the history of the British Empire is recognised by all thinking men and women of our country and our race. How to safeguard and preserve it, therefore, becomes a question of national importance. It has occurred to me that in endeavouring to answer that momentous question we may lose sight of a cause of disablement and death to young children which is absolutely preventable, and which accordingly should be prevented.

The cause to which I refer is burning or scalding. Sir William J. Thompson, M.D., the Registrar-General for Ireland, has kindly furnished me with the following official figures :—

“REGISTRATION OF DEATHS, IRELAND.

“Statement showing the number of deaths from Burns or Scalds (distinguishing deaths of children under five years of age) registered in the Dublin Registration Area during each of the five years 1912-1916. The figures have been extracted from the Registrar-General’s Yearly Summaries of the Weekly Returns.

Year	DEATHS FROM BURNS OR SCALDS		
	Persons at all ages	Children under 5 years	
1912	...	47	25
1913	...	42	19
1914	...	50	28
1915	...	53	29
1916	...	35	22
Totals for 5 years	...	<u>227</u>	<u>123</u>
Percentages	...	100	54.2

“WILLIAM J. THOMPSON, *Registrar-General.*

“General Register Office, Charlemont House,

“Dublin, 15th March, 1917.”

* Read before the Section of State Medicine in the Royal Academy of Medicine in Ireland on Friday, April 13, 1917.

The National Society for the Prevention of Cruelty to Children in 1911 issued a leaflet headed "Death by Burning : a Warning." That leaflet contains these sentences : "In the ten years, 1900-09, 2,166 children under five years of age were burned or scalded to death in Ireland. During 1909 alone, 214 children so met their death.

At my request the Staff Sister of the Surgical Landing at the Meath Hospital and County Dublin Infirmary prepared a list of the admissions, during the hospital year ended March 31, 1917, to the Smyly Children's Ward, of burned or scalded children. The casualties were 12 in number. I give the sex, age, nature of the injury, and result of the accident in the case of each of the twelve patients :—

1. Girl, aged 10 years, admitted April 5, 1916; died next day, 27 hours after admission. Verdict at Coroner's inquest : "Accidental Death."
2. Girl, aged 3 years, soldier's child, admitted April 13, for slight scald of arm; discharged May 17.
3. Girl, aged 2 years, soldier's child, admitted June 6; died June 8, 15 hours after admission. Verdict at Coroner's inquest : "Accidental Death."
4. Boy, aged 9 months, admitted July 17; discharged July 26; scald of neck and slight scald of arm.
5. Girl, aged 16 months, admitted August 20; discharged October 11.
6. Girl, aged 1 year, admitted August 20; discharged September 24.
7. Boy, aged $3\frac{1}{4}$ years, admitted October 12; discharged November 17.
8. Girl, aged 1 year, admitted for scalds, November 11; discharged November 30. A soldier's child.
9. Girl, aged $3\frac{3}{4}$ years, admitted for scalds, November 20; discharged November 28.
10. Boy, aged 3 years, a soldier's child, admitted December 15, 1916; discharged January 20, 1917.
11. Girl, aged 3 years, admitted December 16, 1916; discharged January 12, 1917.

12. Girl, aged 3 years, admitted February 21, 1917; died next day, within 24 hours of her admission.

The lesions in these cases were chiefly burns of the head, with severe injuries to the eyes, and scalds of the neck and arms—the latter caused by the child upsetting a teapot of hot tea, or a plate of hot porridge, or a bowl of hot soup. The burning cases were caused by the children's clothes catching fire.

It will be noticed that nine of the twelve children were girls. Also that four of the sufferers were children of soldiers—a fact which suggests a misuse of the mothers' separation allowances. Three of the twelve children died—a mortality of 25 per cent.

Now it is to be remembered that the foregoing figures relate to only one of the ten clinical hospitals in Dublin, among which the National Children's Hospital, Harcourt Street, and Temple Street Children's Hospital are not included. If we take these Meath Hospital figures as a fair average, it is obvious that the accidents by burns and scalds among children of very tender age in Dublin are both many and fatal.

Apart from the loss of life caused by these preventable accidents, it is painful to think of the suffering—amounting to agony—through which these child-patients have to pass for weeks or months before they recover. And even then they are probably disfigured for life.

What are the remedies for this lamentable tale of suffering and death? In the leaflet of the National Society for the Prevention of Cruelty to Children there are some self-evident propositions which will bear quotation. They are as follow :—

“ It is the duty of parents to protect their children.”

“ It is the duty of the Society to deal with parents who fail to do this.”

“ Small children should never be left alone in a room with an unguarded fire. The risk of danger is very great. Children are fond of playing with fire, and have no idea of the risks they run.”

The pamphlet goes on to show that most of the 214 children who in Ireland met their deaths in 1909 by burns or scalds would not have lost their lives had a fire-guard been provided. A fire-guard is an inexpensive article.

It is now an indictable offence to leave a child in a room where there is an unguarded fire. In proof of this last statement, it may be well to quote *in extenso* Section 15 of the Children Act, 1908 [8 Edw. 7, Ch. 67], which runs as follows :—

“ If any person over the age of sixteen years who has the custody, charge, or care of any child under the age of seven years allows that child to be in any room containing an open fire-grate not sufficiently protected to guard against the risk of the child being burnt or scalded, without taking reasonable precautions against that risk, and by reason thereof the child is killed or suffers serious injury, he shall on summary conviction be liable to a fine not exceeding ten pounds : Provided that this section shall not, nor shall any proceedings taken thereunder, affect any liability of any such person to be proceeded against by indictment for any indictable offence.”

Fortunately, this Act of Parliament, which has been well called “The Children’s Charter,” applies to the whole of the United Kingdom. In its application to Ireland the measure is subject to various modifications—twenty in all—which are set out in detail in Section 133 of the Act.

Unlike many, if not most, enactments by the Legislature, Section 15 of the Children Act, 1908, is expressed in clear language, easily understood of the people. It is the more to be regretted, therefore, that effect has seldom, if ever, been given to the salutary preventive procedure contemplated under the section. Personally, I am unaware of any prosecution having been instituted under its provisions since section 15 became part of the law of the land in 1908—nine years ago.

I have reason to know, also, that His Majesty’s

Coroners have not always considered it necessary to require a rider to the verdict of the jury in fatal cases of burning or scalding in young children. In two fatal cases of burns in children of tender years treated at the Meath Hospital during the past year, the verdict at the Coroner's inquest was "Accidental Death"—a self-evident proposition, which scarcely required the majesty of Coroner's Law for its proof. The question which remains unanswered is: "What reference, if any, was made at the inquiry to Section 15 of the Children Act, 1908?"

Children are, as I have already stated, the most valuable asset to the Empire and the Race at the present time. Child-life should, therefore, be most jealously guarded against harm, not only from without, but especially from within, the home.

In one of his most beautiful and touching lyrics, the poet Longfellow caught this idea. I am tempted to quote some of his lines :—

O child! O new born denizen . . .
Of life's great city! on thy head
The glory of the morn is shed
Like a celestial benison!
Here at the portal thou dost stand
And with thy little hand
Thou openest the mysterious gate
Into the future's undiscovered land.

* * *

Like the new moon thy life appears;
A little strip of silver light,
And widening outward into night
The shadowy disk of future years.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Finch and Baines. A Seventeenth Century Friendship.

By ARCHIBALD MALLOCH, B.A. (Queen's), M.D. (M'Gill), Temporary Captain, Canadian Army Medical Corps. " Nulla dies unquam memori nos eximet aevo." (Virgil as adapted by Finch). Cambridge : At the University Press. 1917. Demy Quarto. Pp. x + 90. With Frontispiece and Nine Plates.

THE author of this deeply interesting book tells us that the task was undertaken at the suggestion of Sir William Osler, Bart., F.R.S., of Oxford, and so successful has been the issue that Medicine and Medical biography have been enriched with a charming portraiture of two physicians who reflected honour on their country as scholars, anatomists, and plenopotentiaries. But the special charm of the well-told story is the tracing from its first development to its full maturity of the friendship—strong as that of Jonathan for David—of the two men, an uninterrupted friendship of more than thirty-six years' standing. One, to quote Finch, " which the world never did yet equal, nor I believe will ever parallel." How Finch felt when his dear friend Baines fell ill is best told in a quotation from his notebook made when the calamity occurred. ". . . but that which cutt off the thread of all my worldly happiness and application to business was the malignant double tertian which seised, August the 22nd, my dear friend, Sir Thomas Baines, and on Monday, the 5th of September, brought him to his last and . . . which irreparable losse brought my tertian to a double tertian also, and that reduced me to

so much weakness that I was given over by my physician, one Altois, a Portuguese Jew, and by all others, especially upon my relapse."

The genesis of this excellent biography had its beginning in the location of Captain Malloch in charge of a small hospital for officers at Burley-on-the-Hill in Rutland. This was for years the seat of the Earls of Winchelsea and Nottingham, whose family name was Finch. It is a house rich in historical associations, and contains a large collection of fine portraits. Amongst these are several seventeenth century portraits of Sir John Finch and Sir Thomas Baines.

Sir John Finch was the younger son of Sir Heneage Finch, the brother of Thomas, Earl of Winchelsea. He received his early education at Eton under Norris and at Mr. Sylvester's school in the parish of All Saints, Oxford. On the 19th of February, 1641-42, he was admitted as a fellow-commoner; and, according to Munk, on the 22nd of May, 1647, he took his degree of bachelor of arts. This was a revolutionary year at Oxford, and Finch returned to Christ's College, Cambridge, where he met Baines, and thus began their life-long friendship. Thomas Bains, the son of Richard Bains, of Whaddon, in Cambridgeshire, was admitted pensioner at Christ's College on October 5, 1638. Neither Finch nor Baines seem to have taken any sides in the Civil War; but Mr. Finch was throughout life a Royalist, as was his brother Heneage, who became Earl of Nottingham and Solicitor-General during the reign of Charles the II., and distinguished himself in the prosecution of the regicides, a report of which he published in 1660. His character is drawn by Dryden, in his "Absalom and Achitophel," under the name of Amri:—

"To whom the double blessing does belong
With Moses, inspiration, Aaron's tongue."

And the anonymous author of the "Lives of the Lord Chancellors" says of him that "He was a man of probity and well versed in the laws, an uncorrupt judge, and in his own court could resist the strongest application

even from the King himself." These opinions of the eldest son of this distinguished family are noted that the reader may form some idea of how Francis Finch fulfilled with honour to himself, benefit to science, and advantage to the country the duties he was called to.

With his friend Baines he commenced, soon after graduation, the Grand Tour of the Continent, which commenced on the 20th of October, 1651, of which he was delightfully gossipy to his sister, Lady Conway. His description of the "Hôtel Dieu" and "La Charité," of Paris, are worthy of reproducing as a picture of the conditions under which our predecessors worked and evolved the Science of Medicine. "The Hôtel Dieu for the number of diseased is a famous hospital, but there's eight in a bed. But the Charité is the best accommodated that can be, as any gentleman in his own house. I believe there is about 200, every one in a bed singly." His diary of his itinerary also makes mention of the rumour that Sir Kenelme Digby was supposed to start the rumour of Dr. Harvey having performed lithotomy on himself. We may just mention that Harvey and Finch were related by marriage, and that it was on Harvey's advice that he visited Padua and studied at that famous school of medicine. The then Professor of Anatomy was Molinetti, who was called to the chair in 1649—a chair which had been so worthily occupied by Vesalins, Fallopins and Fabricius ab Aquapendente. As a student Finch greatly distinguished himself, becoming Pro-Rector and Syndic of the University in 1656. The account of the ceremonial of induction to this high office and of the uniform worn is well told; and is all the more interesting as Finch was the only Englishman so honoured. In 1657, Finch and Baines took their medical degrees. In 1659 the two friends removed from Padua to Pisa; where Finch was appointed lecturer on anatomy, and came under the notice of the Duke of Tuscany, where he had as colleagues Malpighi and Borelli, and enjoyed the companionship and friendship of the members of the famous "Academia del Cimenti,"

which has been described as “the greatest glory of Italy after Galileo.” But gradually at the Court of the Grand Duke Ferdinand, with whom he became a great favourite, Finch became a politician, and filled the rôle of the British Confidential Agent at Tuscany. Happily, however, we possess evidence of how faithfully and excellently he performed his duties as an anatomist at Pisa in the so-called “*Tabulae Harveianæ*”—plates worthy to bear the name of Harvey, and as such all the more creditable to Finch.

We must, however, refer our readers to Dr. Malloch’s work for the after-events of Finch’s life; of his return to England; his journey to Constantinople as English Ambassador; and his story of the death of Baines. We cannot but admire the research and patient labour that collected the mass of material utilised in the production of this delightfully-told story of two worthy English gentlemen, who in every position to which they were called showed themselves worthy of the trust committed to their charge.

We cannot conclude without mention of the highly creditable manner in which the book is published. Printed on unglazed paper with good margins, it is light to hold; and, the paper being unglazed, the eyes are not pained and headache does not result from a reading of one or more hours.

When to Advise Operation in General Practice. By A. RENDLE SHORT, M.D., B.S., B.Sc. (Lond.), F.R.C.S. (Eng.) Bristol : John Wright & Sons, Ltd. 1916. Cr. 8vo. Pp. vii. + 279.

THE author has set himself a very difficult task in giving a definite opinion when to operate, and on the other hand when it is wiser not to advise operative treatment in most of the commoner diseases that flesh is heir to. He recognises “that dogmatic conclusions on paper

must *sometimes* be modified in practice." It would be wiser to say "often" than "sometimes."

There is much sound advice given in this small volume, and occasionally some that is not so sound. For instance, the permanent drainage by a supra-pubic opening of a tuberculous bladder will not appeal to most men who have seen the result of such an operation.

Again, stress is rightly laid on the early removal of villous tumours of the bladder, but the operative mortality is put at 4 per cent. following a cystotomy. No mention is made of the more common method of treatment by high frequency spark, which has less than 1 per cent. mortality.

Transactions of the Thirty-eighth Meeting of the American Laryngological Association, held at Washington, May 9th, 10th, and 11th, 1916. Published by the Association, New York.

THE Thirty-eighth Meeting of the American Laryngological Association was held at Washington, and many excellent papers were read, amongst which was one by Dr. T. R. French on a new instrument which he had made, called the Tonsilloscope. By this ingenious instrument one is able to transilluminate the tonsil *in situ*, and thus determine by its colour how much disease is present. He quotes cases to show how important this is, and he also has coloured woodcuts to illustrate his paper and to show the different shades according as the tonsil is diseased. There is no doubt that there is a considerable future before this method of examination.

Dr. Clyde Lynch adds to his communications in the previous year's "Transactions" a paper on the results of his work for the year with suspension laryngoscopy, and explains how he has strengthened and altered his instrument. There are full details and diagrams of his work, which are highly interesting and instructive.

There is a very interesting article on "The Vasomotor Disturbance of the Upper Air Passages," with regard to the classification of the animal and vegetable proteins which are the cause of the irritation. A great deal of spade work has been done, though Dr. Goodale has not been able to evolve a method of treatment which can be recommended to a patient. It is quite clear that in all these cases the upper air passages are sensitive to one or more different proteins floating in the air—the only question is which is the harmful one in each case, and that having been found out, for the moment we are not much further on, as the vaccine and serum therapy which would seem suitable is not well worked out. Some cases which he did work at were easily cured, but unfortunately after a time the sensitiveness returned. However, in one direction the paper is practical—namely, that if it is proved that certain of the proteins in our foods, &c., are the cause, we can, by avoiding these foods, benefit the patient very much.

Surgical Anatomy. By JOHN A. C. MACEWEN, B.Sc., M.B., C.M., F.R.F.P.S. Glasgow. Second Edition. London : Baillière, Tindall & Cox. 1916. Demy 8vo. Pp. xvi + 535. 77 Illustrations (coloured and plain).

THE author's aim has been to give a short account of the anatomical facts of importance to the surgeon. He has succeeded admirably in doing this; he has indeed done more than this. He has given in many cases a very readable mixture of anatomy and physiology that can not fail to be of use—not only to the operator but also to the general practitioner.

In this, the second edition of the book, more attention has been paid to surface anatomy, and a few new illustrations have been added. Both are distinct improvements, but the book's value could be still further insured by a more lavish use of both diagrams and illustrations.

Collected Papers of the Mayo Clinic, Rochester, Minnesota. Edited by MRS. M. H. MELLISH. Vol. VII. 1915. Philadelphia and London : W. B. Saunders Co. 1916. Pp. xii + 983.

THE contents of this—the seventh—volume of the Mayo Clinics Series are arranged as in former volumes in groups and include papers upon :—

- I. The Alimentary Canal.
- II. The Urogenital Organs.
- III. The Ductless Glands.
- IV. The Head, Trunk and Extremities.
- V. Technic.
- VI. General Papers, of which there are eleven, as well as a number of communications in connection with the Cancer problem.

The first paper is an interesting one on "Tuberculosis of the Tongue," which has been reprinted from the *Annals of Surgery*, Vol. 63, 1916. This is followed by a very practical paper on "Infections of the Mouth," in which the treatment of pyorrhœa alveolaris by emetin is considered. From this paper we think the following sentence worthy of reproduction, as it embodies views held by many surgeons who have given thought to the subject :—"Unless the dentists of to-day can perfect their technique so as to give all their patients clean mouths, free from abscesses and gingival irritation, the old-time dentist who extracted teeth and put in plates was really a more useful member of the profession, for with his methods the mouth at least was kept free from foci of infection."

From the next paper, on the subject of "Amebiasis Pyorrhœa Alveolaris," the following conclusions are drawn :—

1. Entamœba buccalis is found in at least 14 per cent. of mouths free from gingival irritation.
2. Clinically there is no parallelism between the pre-

sence of entamœba buccalis—the parasitic amoeba of the mouth—the entamœba histolytica, the cause of amoebic dysentery.

3. Before the alkaloids of ipecacuanha can be accepted as the specific for pyorrhœa alveolaris it must be established that they actually destroy the amoebæ in the mouth, thus removing the cause of the disease.

4. Experimental work has proved that the entamoeba buccalis and the entamoeba histolytica are not the same organism.

Before the entamoeba buccalis is called the cause of pyorrhœa alveolaris its pathogenicity must be demonstrated by animal experimentation.

A paper entitled "An Epidemic of Appendicitis and Parotitis, probably due to Streptococci contained in Dairy Products" is one of great interest.

There are a number of interesting papers upon renal and vesical conditions which will repay perusal.

Several papers will be found on the thyroid gland, and a compound containing iodine which occurs in the thyroid—its chemical nature and physiological activity.

An interesting paper on the cancer problem is included in this volume.

We can strongly recommend the book to all interested in the advance of our knowledge of the various surgical problems with which we are confronted from day to day.

Minor Surgery and Bandaging (Heath, Pollard). Sixteenth Edition. By H. MORRISTON DAVIES, M.D., M.C. (Cantab), F.R.C.S., Capt., R.A.M.C. (T). London : J. & A. Churchill. 1917. Cr. 8vo. Pp. x. + 476.

THIS book is intended for house surgeons and junior practitioners. It is a fund of valuable information, and may be read with advantage by any qualified man who has not had the privilege of a resident post in a general hospital. The book is clearly written, is well illustrated, and has

not a single page that does not contain something worth knowing. In this, the latest edition, a chapter has been added on war surgery. Here the author is not quite so good as in the remainder of the book. Much of the matter dealt with in this chapter is still somewhat controversial, and there is no room for alternative methods in a short work like this. Still a very fair idea is given of the modern treatment of war wounds, a subject we have all much still to learn about. A good index adds considerably to the value of the book.

Generin. By JAMES OLIVER, M.D., F.R.S. (Edin.).

Reprinted from the New York Medical Journal for January 20th, 1917. Pp. 10.

WE have received a pamphlet with the above title for review. We have searched the pages of the latest edition of Dorland's medical dictionary for a definition of the term "Generin," but have found no mention of it. The author of the paper gives no explanation of the name, which sounds like a patent medicine, although he says: "Regarding the chemical nature of this generin, I am not yet in a position to express an opinion, but in the manifestation of its activity iron undoubtedly plays an important rôle. . . ." There are nine cases instanced to prove that a woman who is incapable of menstruating is also incapable of conceiving—but no scientific proof is forthcoming, while the only clinical proof brought forward is an operation performed on a single woman not included in the series of nine. "Generin, the oxidising agent which is responsible for the induction of the oxidative processes connected with menstruation, is the same oxidising agent which is essential for starting gestation." "Menstruation is a secreting function." ". . . there is an increased determination of blood to the internal organs of generation. . . . This heightened vascularity is brought about by . . . generin." If the

hypotheses in the paragraphs quoted were substantiated by scientific evidence we would accept them. There is no such evidence adduced. There is no index of literature on the subject. Until these are brought forward the question of "Generin" must still be *sub judice*.

B. S.

Transactions of the American Surgical Association. Vol. XXXIII. Edited by JOHN F. BINNIE, M.D., Recorder of the Association. Printed for the Association for sale by William J. Dornan, Philadelphia. 1915. Pp. xxx + 825.

THE "Transactions of the American Surgical Association" always contain a number of exceedingly interesting papers, and the volume before us is no exception.

Several very interesting communications upon surgical conditions and laparotomy in typhoid fever occupy some 130 pages in this volume, and are well worthy of perusal. The Surgery of the Spleen occupies a good deal of attention, and is the subject of a number of papers, as is the gall-bladder. The most exhaustive paper in the volume is one by William B. Coley, M.D., of New York, upon "Primary Neoplasms of the Lymphatic Glands, including Hodgkin's Disease." It occupies almost 150 pages.

The concluding paper in this volume is the Report of the Committee appointed by the Association to inquire into the Treatment of Fractures. The results of the inquiry do not seem to differ very much from those of the Committee appointed some years ago by the British Medical Association to inquire into the same subject.

Occupational Diseases of the War. Diagnosis and Treatment. London : Casein, Ltd. 1917. Pp. 37.

THIS advertisement of a proprietary preparation hit upon a catching title. We read it through, and regret that such a title should be prostituted to such an ignoble use.

PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—R. D. PUREFOY, M.D., F.R.C.S.I.
General Secretary—J. A. SCOTT, M.D., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—E. J. MCWEENEY, M.D., F.R.C.P.I.
Sectional Secretary—T. T. O'FARRELL, F.R.C.S.I.

Friday, February 9, 1917.

Exhibits.

Hypernephroma.

DR. H. T. BEWLEY and DR. J. T. WIGHAM showed a specimen of the above condition. The patient, a man aged thirty-five years, and quite healthy, began to complain of a full feeling in his stomach in July, 1916. His bowels became confined and his appetite became poor. In August or September he passed blood in his urine. Early in November his abdomen began to swell, and dropsy of the feet appeared. He came into the Adelaide Hospital at the end of the month. On cystoscopic examination the orifice of the right ureter was seen to be inflamed: streptococci were found in the urine; otherwise the urine was healthy throughout his stay in hospital. Mr. Gunn opened his abdomen in December, but found a tumour, which proved impossible to remove, so the wound was closed, and healed normally. The patient

gradually became weaker, and died in the middle of January. The main specimen is a matted mass of tissue, which was removed with much difficulty from the abdomen. It is mostly composed of tumour masses, everywhere necrotic, and consisting of semi-liquid autolysed materials. At one point a thin layer of stretched-out kidney tissue can be seen, covering a mass of tumour. For the rest, no other normal structures can be made out. The opposite kidney appears to be larger than normal through compensatory hypertrophy. The tumour mass was adherent to the under surface of the liver, through which it had evidently spread. The liver, accordingly, is large, and mottled with white patches—some few as large as a nut, but for the most part miliary, or in groups of small confluent spots. None of the original tumour that was examined showed anything on microscopic section, being completely necrotic, and only a few tumour cells could be made out in the liver, these also being in the same condition. The cells seen were large, with a clear cytoplasm and round nuclei, with a tendency to be arranged in columns or like ducts.

PROF. MCWEENEY drew attention to the danger of secondary metastasis during the surgical removal of hypernephromata.

DR. R. J. ROWLETTE mentioned a case which had come to his notice of hypernephroma of the right kidney with secondary deposits in the liver. The left kidney of this patient seemed to show distinct nephritis.

Organs from a Case of Addison's Disease.

DR. H. T. BEWLEY and DR. J. T. WIGHAM also showed these specimens. The subject, a man aged fifty-five years, began to suffer about the beginning of October, 1916, from weakness and loss of appetite. These symptoms steadily increased, until after three months he was quite prostrate. He was admitted to the Adelaide Hospital with symptoms of very great general weakness, weak heart, very feeble and low-tension pulse, and slight darkening of the skin. This last sign was most marked on the back of his fingers, and the pigmentation formed a marked contrast with the nailbeds, which were quite white. The subcutaneous fat was well developed. The patient died one week after his admission to hospital. The specimens shown are both kidneys,

with the adrenals attached. When removed the adrenals presented the same appearance, being fairly tense, rounded, and giving some fluctuation. That which was incised yielded a thick creamy pus. The whole, kidneys and adrenals, were embedded in a very tough, yellow fat, as hard as mutton fat, and most of the fat in the body was of the same consistency. The right lung had a nodule in the adherent apex, which is evidently an old cured tubercular focus. Sections of the nodule in the lung showed fibrous tissue and pigment, but no active tuberculosis. On section of the adrenal remains they were seen to be composed of a fibrous capsule and tubercular granulation tissue, with caseous material inside. No other sign of tuberculosis was found.

Cultures from a Case of Weeping Eczema of the Hand.

DR. W. M. CROFTON showed cultures from a case of this condition. It was of eighteen months' duration, which had resisted all forms of treatment. Two micro-organisms had been isolated: one was a streptococcus, which grew with exceptionally large colonies; and the other a Gram-negative, non-mobile bacillus, producing acid in glucose, slight acid after long incubation in lactose, acid and clot in litmus milk; no change in mannite, dulcite, or saccharose. The streptococcus liquefied gelatine: this micro-organism was not agglutinated by the patient's serum.

Exophthalmic Goitre.

DR. A. R. PARSONS demonstrated specimens from a case of this disease. The patient, aged thirty-four years, had been two months in hospital; he had the typical signs and symptoms of the disease. He had been feeling well up to the day of his death, and till that time his condition had given rise to no anxiety. At mid-day the patient gave a cry, became cyanosed, had marked dyspnoea, and died suddenly. At the *post-mortem* examination the thymus was found to be greatly enlarged. The speaker quoted two similar cases mentioned in the literature on the subject.

PROF. MCWEENEY said that he had met with a case of sudden death in a boy aged seven years. This boy had an enlarged thymus but also general lymphatic glandular enlargement. He asked whether there was any sign of disease in the coronary arteries or any evidence of myocarditis.

DR. T. GILLMAN MOORHEAD said he would be slow to ascribe the sudden death in this case to the enlargement of the thymus, as he had found the thymus enlarged in two cases of exophthalmic goitre. The organs in both of his cases showed lymphoid tissue but no Hassal's corpuscles.

DR. PARSONS, in reply, said that there was no evidence of heart disease, and considered that if sudden death in Status lymphaticus could be ascribed to enlargement of the thymus, why not also in this case?

1. *Chronic Endocarditis.* 2. *Intestinal Tuberculosis.*

DR. A. R. PARSONS also showed : 1. a specimen of chronic endocarditis with marked calcification of the mitral valve, and 2. a very typical specimen of tubercular ulceration of the intestine.

Malignant Endocarditis.

DR. T. GILLMAN MOORHEAD showed a heart illustrating very acute malignant endocarditis. He had seen the patient about two months' previously, suffering from acute pneumonia. Three weeks after the pneumonia an empyema developed, and this was evacuated by a surgical operation. The wound rapidly healed up, and the patient was just about to return to his home, apparently completely well, when his temperature ran up suddenly, and he had a shivering attack. On examination an aortic systolic murmur was audible, so a diagnosis of malignant endocarditis was made. This was confirmed by the presence of albumen in the urine two days later, and by the finding of streptococci in the blood. The heart was interesting : it showed very acute pericarditis. One cusp of the aortic valve was almost completely destroyed, while the other two were healthy. Immediately above the diseased cusp the aorta was perforated, the perforation leading into a sack about the size of a hazel nut.

DR. W. M. CROFTON inquired whether the streptococcus could be regarded as a secondary infection, and mentioned the value of vaccines in the treatment of pneumonia.

PROF. MCWEENEY drew attention to the similarity of the streptococcus to the pneumonococcus, and to the fact that various strains of pneumonococcus could be identified only by serological tests. He mentioned a case of dissecting

aneurysm of the base of the aorta which he had met with which bore a striking resemblance to the condition of the aorta in Dr. Moorhead's case.

DR. MOORHEAD, in reply, said that the cultural tests of the streptococcus isolated were not yet complete. He stated that the case had received vaccine treatment, but it had not been successful.

Chronic Endocarditis.

DR. W. BOXWELL showed a heart with chronic endocarditis, upon which was implanted a subsequent acute process. The patient, a man aged 44 years, had a previous history of endocarditis. He had recently developed acute nephritis, with an apparent recrudescence of the endocarditis. The patient had no fever, but became markedly dropsical, and died. At the *post-mortem* the heart was enlarged, and exhibited chronic pericarditis. The aortic and mitral valves showed marked evidence of chronic endocarditis, but, in addition, there was recent ulceration with the formation of vegetations. The vegetations on the mitral valves extended up into the auricle. The spleen was enlarged, and contained a large white infarct.

SECTION OF MEDICINE.

President—H. C. DRURY, M.D., F.R.C.P.I.

Sectional Secretary—G. E. NESBITT, M.D., F.R.C.P.I.

Friday, February 23, 1917.

THE PRESIDENT in the Chair.

Some Medical Problems of the Present and the Future.

DR. CROFTON read a paper with this title. He discussed the efficiency or otherwise of our methods of treating some of the chief causes of death.

In the prevention of premature senility the importance of keeping in proper control the activities of the microbial inhabitants of the intestine was emphasised, and autogenous vaccines were advocated for this purpose. The results of Karl

Searson's investigations into the tuberculosis death-rate were quoted, showing the continued retardation in the relative phthisis death-rate, demonstrating the futility of the measures for the prevention and treatment so far employed. Preventive inoculation to insure a normal resistance, which is all that is necessary, was strongly advocated. The results of the immuno- and chemo-therapy employed at the National Hospital for Consumption were given, showing a marked improvement in the percentage of apparent cures.

The present methods for dealing with tuberculosis were adversely criticised, and a complete scheme submitted to the Local Government Board some years ago was outlined. The prophylaxis and treatment of heart disease, bronchitis, and pneumonia were discussed, and suggestions made as to the clearing up of foci of chronic inflammation, in which cancers frequently develop. The present organisation for the investigation into the cure and treatment of disease was adversely criticised.

DR. T. P. C. KIRKPATRICK considered the reported increase in the number of "cured" cases at Newcastle extremely satisfactory. He would like to know whether Dr. Crofton considered the treatment adopted to be entirely responsible for this, and also whether the cases were regarded as permanent, as almost any line of treatment seemed successful at first. He thoroughly approved Dr. Crofton's remarks as to the lack of organised and systematic medical research in Dublin at present, and mentioned that some steps had already been taken to improve matters in this respect.

DR. T. G. MOORHEAD agreed in theory with much of the paper, but pointed out many practical difficulties. Prophylactic inoculation against tuberculosis must, in the present state of our knowledge, compare very unfavourably with well-established methods of protection—such as vaccination against smallpox. How long would immunity take to develop or how long would it persist? In speaking of the "cure" of pulmonary tuberculosis some standard was required. He had recently watched four cases get well on various treatments—two on none beyond general hygiene. He thought the efficiency of vaccines was often exaggerated.

DR. G. E. NESBITT thought the paper unduly optimistic. The claim that the causative organisms could be destroyed in all cases by the methods advocated was not borne out by

universal experience, and the foundation of a widespread system of protection on this theory was to a large extent begging the question.

SIR JOHN MOORE recollects how Stokes often related that one of his most successful cases of recovery from tuberculosis had been a patient whom he had sent away as hopeless, to live as he liked. It was extremely difficult to draw deductions as to the efficacy of any treatment of tuberculosis merely from statistics of apparent cures.

DR. CROFTON, in reply, said the criterions of "cure" at Newcastle were complete freedom from cough and absence of tubercle bacilli from the sputum, preferably after several examinations.

Early Hyperpyrexia in Enteric Fever.

THE PRESIDENT gave an account of a case of typhoid fever recently under his care. Hyperpyrexia occurred early, and was accompanied by wild delirium. The atropin test was positive. The ileum showed typical typhoid lesions in an early stage. [The President's paper was published in full in the April number of this Journal. See page 237.]

Intrathoracic Lymphosarcoma.

DR. G. E. NESBITT read notes of a recent case of intrathoracic tumour in a man of 65. The most striking physical signs were entire absence of breath sounds over the left lung with retained resonance, which later gave way to dulness, owing to the rapid accumulation of fluid in the pleura. Autopsy showed a lympho-sarcoma surrounding the left bronchus, and practically obliterating it.

Friday, March 30, 1917.

THE PRESIDENT in the Chair.

Sudden Death in Tabes Dorsalis.

DR. A. R. PARSONS read a paper with this title. He related the facts of two cases of tabes dorsalis in which sudden death occurred. The first patient, a man aged 41, had consulted him two years before, complaining of some difficulty in walking and unsteadiness, noticed

chiefly while washing his face. There was also slight trouble in micturition—at first difficulty in passing water; later, some loss of control. Seventeen years previously he had a sore on the glans penis, but no other symptoms. His wife had had one miscarriage. He was a healthy man, with the exception of his nervous system, which showed typical, if rather slight, signs of locomotor ataxia. The Wassermann reaction was fairly positive. The case ran the usual course for two years. When one day at dinner, the patient, who during the day had been in his usual good general health, suddenly changed colour, and when examined was found to be dead. The second case was very similar, and the patient died suddenly while playing a game of bridge. In neither case could an autopsy be obtained, but frequent careful physical examination during life showed no evidence of arterial disease, and this could almost certainly be excluded. He considered "cardiac crisis" to be the most probable explanation of death. This condition was almost entirely overlooked in the text-books, but was mentioned by a few authors, notably by Gowers and Osler.

THE PRESIDENT considered the record of these two cases very important; but thought that, as no cardiac symptom had previously appeared and no anginal symptoms were present during the fatal attacks, it was questionable whether they could be called cases of cardiac crisis. In several cases of sudden death Professor O'Sullivan had found, as the only recognisable lesion, a sclerotic or atheromatous condition of the region of the aorta about the openings of the coronary arteries.

DR. G. E. NESBITT was interested to hear that sudden death was a possible occurrence in a disease which one considered essentially chronic. He would like to know what treatment had been adopted in these cases, and what was Dr. Parsons' experience of recent specific methods of treatment—*e.g.*, salvarsan or mercurialised serum by intrathecal injection. He had seen some apparent improvement follow, but could not get the results often claimed.

SIR JOHN MOORE suggested that death was more probably due to brain mischief—*e.g.*, cerebral haemorrhage—than to cardiac crisis of anginal nature.

DR. W. M. CROFTON asked whether these cases had been treated by intensive mercurial inunction with sulphur baths

while they were in Germany, as cases of arrest of the disease by this means were reported.

DR. PARSONS, in reply, said that as far as was possible by clinical examination arterial disease was excluded. Death was also too sudden in both cases for cerebral haemorrhage. No specific treatment had been tried, either in this country or in Germany, where the cases had been treated at various times. He had seen many of the latter prescriptions, which seemed to consist almost entirely of well-advertised proprietary drugs. There was little hope of improvement when actual organic changes had taken place. He thought the explanation of cardiac crisis as a cause of death fairly probable.

Limitation of Vaccine Treatment.

DR. R. J. ROWLETTE read a paper on this subject. [It is published in full at page 306.]

DR. A. R. PARSONS said that all were agreed as to the utility of vaccines in many cases, both prophylactic and curative. He had, however, been disappointed in many conditions—*e.g.*, in bronchiectasis, in which careful vaccine treatment had been a complete failure; and in cases of ulcerative endocarditis, where the organism had been recovered from the blood. It was hard to understand how good results could be expected where numerous organisms are actually present in the blood. He commented on the diminution in the use of alcohol in septic cases at the Rotunda Hospital, where it was formerly used freely.

SIR JOHN MOORE said the contrast drawn by Dr. Rowlette between the limitations of vaccine treatment and the effect of medicinal "specifics" is not of universal application. For example, while we recognise in the salicylates what may be considered a specific against the toxæmia of acute rheumatism, we know that they are practically useless when that toxæmia has produced organic changes—for instance, in the heart.

DR. G. E. NESBITT commented on the difficulty of recognising the causal organism in complex cases.

DR. ROWLETTE, in reply, said that he thought in bronchiectasis the organisms present were saprophytic rather than parasitic. In general infection, while a theoretical explanation of the effect of vaccines was difficult to give, clinical experience had established their efficacy.

SECTION OF OBSTETRICS.

President—GIBBON FITZGIBBON, M.D., F.R.C.P.I.

Sectional Secretary—BETHEL SOLOMONS, M.D., F.R.C.P.I.

Friday, March 2, 1917.

Clinical Notes of a Case of Pneumonia in the Puerperium.

DR. SPENCER SHEILL read these clinical notes. The patient developed a mammary abscess, which was opened on the eleventh day. Up to the ninth day her temperature was normal. After the operation double septic pneumonia set in, from which she died six days' later. There was no evidence of septic infection elsewhere than in the breast. The principal point of interest was the origin of the pneumonia.

THE PRESIDENT OF THE ACADEMY said.—Our interest in Dr. Sheill's case is not a little deepened by its tragic ending. To me it appears that the breast condition was a local evidence of a general septic condition, which developed with accelerated speed after the abscess was treated. I recall the fact that Rokitansky and McClintock recorded cases of puerperal sepsis, attended with suppuration in the breast.

DR. BETHEL SOLOMONS considered that the case was most likely to be one of embolic pneumonia, secondary to the mastitis, while the possibility that the breast symptoms were evidences of general sepsis was also a very feasible hypothesis. He thought it very unfortunate that Dr. Sheill had not attempted to get a culture from the mammary pus or from the uterus, as an autogenous vaccine might have helped in treatment.

DR. DRURY showed some interesting charts of patients who had developed pneumonia during pregnancy. The prognosis of pneumonia in pregnancy is favourable for the mother and bad for the child, as premature labour often occurs. Labour has a beneficial effect on the disease. He quoted the pneumonia statistics of West and Thomas, and said the disease was rare among puerperal women.

DR. CROFTON thought Dr. Sheill's case was interesting from three point of view: first, the source of the infection; secondly, the possibility of uterine infection in the puerperium being caused in some cases by a chronic septicæmia, without

symptoms; and, lastly, the connection of acute infection with pneumonia.

DR. SHEILL, in reply, stated his belief that septic emboli from the breast caused the trouble, and that these were admitted to the circulation by the use of Bier's suction apparatus, which created such powerful suction as to rupture some small veins, and that when the pressure was released septic matter was drawn into these veins. He, therefore, considers the use of the Bier apparatus to be fraught with considerable danger in cases where the abscess does not freely communicate with the surface.

Some Observations on the Operative Treatment of fixed Backward Displacement of the Uterus.

DR. ALFRED SMITH read a paper with this title, in which he said he found the behaviour of the uterus different after the separation of the adhesions. In some cases the uterus came easily up to the abdominal wall, showing a certain amount of relaxation of its supports; in others, it did not come up so easily, and some considerable degree of force was necessary to draw it up into position. He divided his cases into two groups—(a) the uterus with relaxed supports, (b) the uterus with unrelaxed supports. The uterus with relaxed supports must be suspended or fixed. On freeing uteri with unrelaxed supports three types were met with—(1) where the uterus righted itself automatically, (2) where manual replacement was necessary, (3) where, owing to a thickened and shortened utero-sacral ligament, the uterus could not be brought into the normal position of anteflexion. Types (1) and (2) should neither be suspended nor fixed, as they have little tendency to fall back. With type (3) he freed the uterus from its entanglements, straightened out the tubes, released the ovaries, and left the case to nature. He urged the importance of determining the limitations of suspension or fixation, and of finding the correct principle that should govern gynaecologists in their treatment of fixed backward displacements. [Dr. Smith's paper appeared in full in the number of this JOURNAL for April, 1917—page 257.]

DR. HASTINGS TWEEDY said that he too had found great difficulty in dealing with the class of cases described by Professor Smith. They usually showed a shallow pouch of Douglas and very hard and unyielding sacro-uterine ligaments. The condition arose from a previous peri-metritis,

and affected the structures included between the sacro-uterine folds.

He was in the habit of cutting these folds down to their basement connective tissue. By this he frees the uterus without injuring the uterine support, for the uterus owes its entire stability to the utero-peritoneal connective tissue, which lies at the bases of the so-called ligaments. The fibrous bands are intimately connected with the uterine muscles, and form tendons to them.

THE PRESIDENT OF THE ACADEMY said.—The subject treated in Dr. Smith's paper owes its importance to the frequency of its occurrence amongst the serious sequelæ of parturition, the impairment of general health which often attends it, and the partial success which is all that sometimes attends our treatment of it. I think Dr. Smith's classification of such cases is a useful and practical one, calculated to aid us in selecting the treatment best suited to each case.

DR. BETHEL SOLOMONS thought that in all cases of fixed backward displacement which were treated by operation the uterus should be suspended in the manner suitable to the case. He considered that the mere loosing of adhesions, as suggested by Dr. Smith, was not enough to bring about a permanent cure. Where there was a tendency for utero-sacral ligaments to exert tension on the uterus which was suspended, tamponnade, by means of medicated vaginal plugs, would cure this inflammatory condition. He deemed it advisable to curette the uterus in addition to correcting the malposition.

THE PRESIDENT said the classification which had been made was very necessary in the treatment of cases. He had adopted the method of suspension of the uterus to the abdominal wall for some time, but came to the conclusion that it was unsatisfactory to bring the fundus forward to a fixed degree in all cases, and now performed a modified Gilliam operation, as thus the fundus could be brought forward sufficiently to prevent retrogression without putting undue tension on those uteri which would not come into complete anteversion. He also considered it most essential when the uterus was brought forward to see that the appendages did not fall back again, as they often have loose ligaments. The Gilliam operation has the advantage that it takes up some of this slack of the broad ligaments, but if not sufficient the ovary should be fixed to the top of the broad ligament.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, March 24, 1917.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended Saturday, March 24, 1917, in the Dublin Registration Area and the eighteen principal provincial Urban Districts of Ireland was 22.4 per 1,000 of the aggregate population, which for the purposes of these returns is estimated at 1,127,268. The deaths from all causes registered in the week ended Saturday, March 24, and during the period of four weeks ended on that date, respectively, were equal to the following annual rates per 1,000 of the population :—Nineteen Town Districts, 22.4 and 22.8 ; Dublin Registration Area, 26.3 and 25.0 ; Dublin City, 26.7 and 25.7 ; Belfast, 20.7 and 22.3 ; Cork, 13.6 and 17.9 ; Londonderry, 19.6 and 20.6 ; Limerick, 28.4 and 22.4 ; and Waterford, 13.3 and 18.5.

The deaths from certain epidemic diseases—namely, enteric fever, typhus, small-pox, measles, scarlet fever, whooping-cough, diphtheria, dysentery, and diarrhoeal diseases—registered in the nineteen town districts during the week ended Saturday, March 24, 1917, were equal to an annual rate of 1.4 per 1,000. Among the 156 deaths from all causes in Belfast were 1 from typhus fever, 4 from measles, and 3 from diarrhoeal diseases, all among children under 2 years of age.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock and Kingstown. The population of the Area is 399,000.

In the Dublin Registration Area the births registered during the week ended March 24, 1917, amounted to 197—106 boys and 91 girls, and the deaths to 213—108 males and 105 females.

DEATHS.

The deaths registered, omitting the deaths (numbering 12)

of persons admitted into public institutions from localities outside the Area, represent an annual rate of mortality of 26.3 per 1,000 of the population. During the four weeks ended with Saturday, March 24, the death-rate averaged 25.3, and was 0.2 above the mean rate for the corresponding portions of the ten years, 1907-1916. The rate for all deaths registered during the twelve weeks of 1917 was 27.1, while in the corresponding period of the preceding ten years it had been 26.5.

The 201 deaths appertaining to the Area included 1 from enteric fever, 17 from measles, 4 from whooping-cough, 2 from influenza, and 1 from dysentery. In the three preceding weeks deaths from enteric fever had numbered 1, 1 and 0; deaths from measles, 7, 17, and 8; from whooping-cough, 0, 3 and 1; from influenza, 4, 5 and 4; and deaths from dysentery, 1, 0 and 0, respectively.

Tuberculosis caused 33 deaths, as against 25, 31 and 25, respectively, in the three weeks preceding. Of the 33 deaths ascribed to tuberculosis, 29 were referred to pulmonary tuberculosis, 3 to tubercular meningitis, and 1 to disseminated tuberculosis.

Eight deaths were caused by cancer, 18 by pneumonia (11 by broncho-pneumonia, and 7 by pneumonia, type not distinguished), 17 by organic diseases of the heart, and 30 by bronchitis.

There were 6 deaths from violence, of which 2 were caused by gunshot wounds.

Among deaths of infants under one year old, 3 were ascribed to convulsions and 5 to congenital debility.

Fifty-eight of the deaths registered during the week appertaining to the Area were of children under 5 years of age, 23 being infants under one year, of whom 1 was under one month old. Fifty-one deaths of persons aged 65 or upwards were registered, including 44 deaths of persons of 70 years or upwards.

Of the 201 deaths recorded, 74 occurred in hospitals and other public institutions.

STATE OF INFECTIOUS DISEASES.

The following returns of the number of cases of Infectious Diseases notified under the "Infectious Disease (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland)

Act, 1908," have been furnished by the respective sanitary authorities :—

TABLE I.—SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area—(viz., the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock and Kingstown), and in the Cities of Belfast, Cork, Londonderry, Limerick, and Waterford, during the week ended March 24, 1917, and in each of the preceding three weeks.

A dash (—) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending															Total
		Measles	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Croup	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Diarrhoeal Diseases	Pollomyelitis	
City of Dublin	Mar. 3	2	.	.	.	3	.	.	.	1	.	.	.	.	10	18
	Mar. 10	1	.	.	.	1	.	.	.	1	.	.	.	.	8	13
	Mar. 17	16	.	.	.	.	.	.	.	2	.	.	.	.	11	24
	Mar. 24	.	.	.	.	2	.	.	.	1	.	.	.	.	9	12
Rathmines and Rathgar Urban District	Mar. 3	3	.	.	.	.	.	.	.	.	.	.	.	.	—	3
	Mar. 10	.	.	.	.	.	.	.	.	.	.	.	.	.	—	.
	Mar. 17	.	.	.	.	4	.	.	.	1	.	.	.	.	4	4
	Mar. 24	.	.	.	.	1	.	.	.	1	.	.	.	.	2	2
Pembroke Urban District	Mar. 3	.	.	.	.	.	.	.	.	1	.	.	.	.	—	1
	Mar. 10	1	.	.	.	.	.	.	.	1	.	.	.	.	3	3
	Mar. 17	7	.	.	.	.	.	.	.	.	.	.	.	.	1	1
	Mar. 24	.	.	.	.	.	.	.	.	.	.	.	.	.	7	7
Blackrock Urban District	Mar. 3	2	.	.	.	.	.	.	.	.	.	.	.	.	—	2
	Mar. 10	3	.	.	.	.	.	.	.	.	.	.	.	.	3	3
	Mar. 17	5	.	.	.	.	.	.	.	.	.	.	.	.	6	6
	Mar. 24	7	.	.	.	.	.	.	.	.	.	.	.	.	7	7
Kingstown Urban District	Mar. 3	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1
	Mar. 10	.	.	.	.	.	.	.	.	.	.	.	.	.	—	.
	Mar. 17	.	.	.	.	1	.	.	.	.	.	.	.	.	1	1
	Mar. 24	.	.	.	.	.	.	.	.	.	.	.	.	.	—	.
City of Belfast	Mar. 3	4	.	.	.	1	.	.	13	4	.	.	.	.	—	22
	Mar. 10	6	.	.	.	2	.	.	7	1	.	.	.	.	2	18
	Mar. 17	7	10	.	.	7	.	.	6	3	.	.	.	.	3	36
	Mar. 24	11	1	.	.	2	.	.	15	1	.	.	.	.	3	33
Cork City of	Mar. 3	3	.	.	.	1	.	.	.	.	.	.	.	.	—	3
	Mar. 10	.	.	.	.	1	.	.	.	.	.	.	.	.	—	1
	Mar. 17	2	.	.	.	1	.	.	1	.	.	.	.	.	7	7
	Mar. 24	1	1	.	.	2	.	.	1	12	.	.	.	.	—	7
City of Londonderry	Mar. 3	—	1	.	.	.	.	.	.	1	.	.	.	.	—	2
	Mar. 10	—	1	.	.	.	.	.	.	.	.	.	.	.	—	1
	Mar. 17	—	.	.	.	2	.	.	.	.	.	.	.	.	4	4
	Mar. 24	—	1	.	.	.	.	.	.	.	.	.	.	.	—	1
City of Limerick ^b	Mar. 3	—	.	.	.	.	.	.	.	.	.	.	.	.	—	.
	Mar. 10	—	.	.	.	.	.	.	.	.	.	.	.	.	—	.
	Mar. 17	—	.	.	.	.	.	.	.	.	.	.	.	.	1	1
	Mar. 24	—	.	.	.	.	.	.	.	.	.	.	.	.	—	.
City of Waterford	Mar. 3	—	.	.	.	.	.	.	.	.	.	.	.	.	3	3
	Mar. 10	—	.	.	.	.	.	.	.	.	.	.	.	.	2	3
	Mar. 17	—	.	.	.	.	.	.	.	.	.	.	.	.	1	1
	Mar. 24	—	.	.	.	.	.	.	.	.	.	.	.	.	—	.

^a Continued Fever.

^b Three cases of varicella were reported during the week ended March 10th.

^c Not including one case of cerebro-spinal fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN
HOSPITALS.

Table II. exhibits the number of cases of certain infectious diseases treated in the Dublin Hospitals during the week ended March 24, 1917, and the number under treatment at the close of each of the three preceding weeks.

TABLE II.

Diseases	No. of Cases in Hospital at close of week ended			Week ended March 24			
	Mar. 3	Mar. 10	Mar. 17	No. admitted	Dis- charged	Died	No. under treat- ment at close of week
Enteric Fever	20	17	14	2	3	1	12
Typhus -	1	1	—	—	—	—	—
Small-pox -	—	—	—	—	—	—	—
Measles -	51	48	65	38	13	2	88
Scarlet Fever	28	19	25	4	5	—	24*
Diphtheria -	11	13	15	1	4	—	12
Pneumonia -	34	35	35	7	8	1	33

* Exclusive of 17 patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

From this Table it appears that the cases admitted to hospital during the week ended March 24, and the cases under treatment at its close, respectively, were as follows:— Enteric fever, 2 and 12; measles, 38 and 88; scarlet fever, 4 and 24 (exclusive of 17 convalescents at Beneavin, the Convalescent Home of Cork Street Hospital); and diphtheria, 1 and 12. Seven cases of pneumonia were admitted during the week, and 33 remained under treatment at its close. Of the deaths in hospitals during the week 2 were from measles, 1 was from pneumonia, and 1 was from enteric fever.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, March 24, in 96 large English towns (including London, in which the rate was 17.5) was equal to an average annual death-rate of 16.6 per 1,000 persons living. The average rate for 16 principal towns of Scotland was 16.2 per 1,000, the rate for Glasgow being 16.3, and that for Edinburgh 18.4.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell-Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended March 24. From this report it appears that of 60 cases notified, 17 were of scarlet fever, 13 of pulmonary tuberculosis, 12 of other forms of tuberculosis, 10 of diphtheria, 6 of erysipelas, and 2 of puerperal fever. Among the 424 cases of infectious diseases in hospital at the close of the week were 137 of pulmonary tuberculosis, 89 of scarlet fever, 82 of measles, 50 of diphtheria, 21 of whooping-cough, 7 of cerebro-spinal fever, 6 of erysipelas, and 3 of puerperal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of March, 1917.

Mean Height of Barometer,	- - - -	29.829 inches.
Maximal Height of Barometer (15th, at 9 p.m.),	-	30.527 ,,
Minimal Height of Barometer (6th, at 9 a.m.),	-	29.124 ,,
Mean Dry-bulb Temperature,	- - -	39.6°.
Mean Wet-bulb Temperature,	- - -	37.7°.
Mean Dew-point Temperature,	- - -	35.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	.206 inch.
Mean Humidity,	- - - -	84.5 per cent.
Highest Temperature in Shade (on 16th),	-	56.2°.
Lowest Temperature in Shade (on 8th),	-	28.2°.
Lowest Temperature on Grass (Radiation) (27th)	-	25.3°.
Mean Amount of Cloud,	- - - -	66.9 per cent.
Rainfall (on 23 days),	- - - -	2.997 inches.
Greatest Daily Rainfall (on 4th),	- - -	1.090 ,,
General Directions of Wind,	- - -	W., SE., N.

Remarks.

March, 1917, proved to be a fourth cold month in succession—the mean temperature being 2.6° below the average. It was not, however, so cold as March of the previous year, of which the mean temperature was 3.9° below the average. This was due to the fact that there were brief spells of comparatively mild weather—notably on the 16th and following days. The month also opened with two spring-like days, but the approach of a large complex and deep atmospheric depression to the West of Ireland on the 3rd led to a very unsettled spell of weather in the week ended Saturday, the 10th. The precipitation in Dublin during that week exceeded two inches (2.068 inches), and consisted largely of sleet and snow. On Sunday, the 4th, the rainfall measurement was 1,090 inches. In that period temperature became very low in Great Britain, and more particularly in the North of England and over Scotland. On the 8th and 9th there were many maxima as low as 30° to 32° , while night frosts of great intensity were felt very commonly. The lowest minima reported were in many places below 10° F., the readings being zero at Balmoral and 2° below zero at West Linton in Peeblesshire. Some observers for the Meteorological Office note that it was the coldest March weather in their records, the cold being rendered more noticeable by the keen and bitter wind by which it was accompanied.

The following week (11th–17th) was cold at first but otherwise fine and dry—the rainfall in Dublin was only 0.036 inch on 2 days. On Friday, the 16th, the screened thermometer rose to 56.2° , the highest point reached since January 2nd of the present year.

Unsettled, generally cold weather prevailed in the last two weeks of the month. The British Isles were under the influence of a large and deep atmospheric depression from the 28th to the close of the month, which ended with heavy falls of hail and snow.

In Dublin the arithmetical mean temperature (41.1°) was 2.6° below the average (43.7°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 39.6° . In the fifty years ending with 1915, March was coldest in 1867 and 1883 (M.T. = 39.0°), and warmest in 1903 (M.T. = 48.1°). In 1915 the M.T. was 44.0° , and in 1916 it was 39.8° .

The mean height of the barometer was 29.829 inches, or

0.087 inch below the corrected average value for March—namely, 29.916 inches. The mercury rose to 30.527 inches at 9 p.m. of the 15th, and fell to 29.124 inches at 9 a.m. of the 6th. The observed range of atmospheric pressure was, therefore, 1.403 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 39.6°. Using the formula, $\text{Mean Temp.} = \text{Min.} + (\text{Max.} - \text{Min.}) \times .485$, the M.T. becomes 40.9°. The arithmetical mean of the maximal and minimal readings was 41.1°, compared with a thirty-five years' (1871–1905) average of 43.7°. The mean maximum was 46.3°; the mean minimum, 35.9°. On the 16th the thermometer in the screen rose to 56.2°—wind, S.W.; on the 8th it fell to 28.2°—wind, N.N.E. The minimum on the grass was 25.3°, on the 27th.

The rainfall was 2.997 inches, distributed over 23 days. The average rainfall for March in the thirty-five years, 1871–1905, inclusive, was 1.910 inches, and the average number of rain-days was 17. The rainfall, therefore, and the rain-days were much above the average. In 1867 the rainfall in March was very large—4.972 inches on 22 days.* On the other hand, the smallest March rainfall was 0.288 inch on 8 days in 1893. In 1915, the rainfall was 1.097 inches on 13 days; in 1916, it was 3.404 inches on 24 days.

High winds were noted on 13 days, and reached the force of a fresh gale on 4 days—the 4th, 6th, 7th and 19th. A solar halo appeared on the 10th and 15th, and a lunar corona on the 30th. Hail fell on as many as 7 days; snow or sleet on 8 days. The days on which hail fell were the 9th, 19th, 21st, 22nd, 26th, 29th and 31st. Snow or sleet fell on the 4th, 7th, 8th, 9th, 22nd, 26th, 29th and 31st. During the greater part of the month the Dublin Mountains were deeply covered with snow. The lowest daily maximal temperature was 34.4° on the 8th. The highest daily minimum was 45.9° on the 25th.

The rainfall in Dublin during the three months ending March 31st amounted to 5.986 inches on 53 days, compared with 3.292 inches on 44 days in 1911, 8.799 inches on 61 days in 1912, 8.333 inches on 55 days in 1913, 5.585 inches on 57 days in 1914, 6.471 inches on 51 days in 1915, 8.361 inches on 66 days in 1916, and a thirty-five years' average (1871–1905 inclusive) of 6.130 inches on 50.0 days.

At the Normal Climatological Station in Trinity College, Dublin, Mr. T. Mulock Bentley reports that the mean value of the readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 40.7° . The arithmetical mean of the daily maximal and minimal temperatures was 41.3° . The screened thermometers rose to 59° on the 16th, and fell to 27° on the 8th. On the 13th the grass minimum was 21° . Rain fell on 22 days to the amount of 2.804 inches, the greatest fall in 24 hours being 0.973 inch on the 4th. The duration of bright sunshine, according to the Campbell-Stokes recorder, was 90.3 hours, of which 8.5 hours occurred on the 27th. The mean daily sunshine was 2.9 hours. The mean temperature of the soil at 9 a.m. was 41.7° at a depth of 1 foot ; at a depth of 4 feet it was 43.4° .

Captain Edward Taylor, D.L., returns the rainfall at Ardgillan, Balbriggan, Co. Dublin, as 2.54 inches on 21 days. This amount was 0.50 inch above the average, and the rain-days were 4 in excess. The largest measurement in 24 hours was 0.78 inch on the 4th. Up to March 31st the rainfall at Ardgillan amounted to 6.08 inches, or 0.33 inch below the average, and the rain-days were 52, or 1 above the average number for the first quarter of the year. The thermometer in the screen rose to 58.6° on the 16th, and fell to 25.9° on the 27th. The wettest March was in 1903—3.86 inches on 26 days ; the driest in 1893—0.66 inch on 9 days.

Mr. T. Bateman returns the rainfall at The Green, Malahide, Co. Dublin, as 2.22 inches on 17 days. The greatest rainfall in 24 hours was 0.97 inch on the 4th. The average rainfall for the previous thirteen months of March was 1.941 inches on 17 days.

The rainfall at Stirling, Clonee, Co. Meath (231 feet above the sea), is returned by Mr. J. Pilkington as 2.75 inches on 22 days, the largest measurement on any one day being 0.46 inch on the 6th. On the 5th 0.40 inch was measured. At Stirling, 6.72 inches of rain have fallen on 55 days during the first quarter of 1917.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 21 days to the total amount of 2.72 inches, the largest daily measurement being 0.51 inch on the 4th. The duration of bright sunshine was 105.3 hours, of which 9.2 hours occurred on the 27th.

At Cheeverstown Convalescent Home, Clondalkin, Co. Dublin, Miss Mary Love measured 2.49 inches of rain on 22 days. The heaviest falls in 24 hours were 0.83 inch on the 6th and 0.45 inch on the 4th—on both occasions the precipitation was chiefly in the form of sleet and snow. Frost, snow and hail were of frequent occurrence.

Mr. F. C. Dudley Joynt, M.A., returns the rainfall at 89 Anglesea Road, Donnybrook, as 2.775 inches on 20 days, 1.160 inches being measured on the 4th. Since January 1, 5.605 inches have fallen at this station on 47 days. The thermometer rose to 58° on the 28th and fell to 24° on the 31st.

Dr. Arthur S. Goff reports that at Belfort House, Dundrum, Co. Dublin, rain fell on 16 days to the amount of 3.25 inches, compared with an average of 2.64 inches on 20 days in the ten years ended with 1910. The greatest daily rainfall was 1.34 inches on the 4th. The temperature in the shade ranged from 58° on the 16th to 27° on the 8th. The mean shade temperature was 41.2°, compared with a ten years' (1901–1910) average of 43.7°, 45.9° in 1912, 43.8° in 1913, 44.0° in 1914, 42.7° in 1915, and 39.6° in 1916. Snow and hail fell on several days during the month.

At Marino, Killiney, Co. Dublin, Mr. Wm. J. McCabe, the observer for the Right Hon. L. A. Waldron, registered 1.97 inches of rain on 15 days, the greatest falls in 24 hours being 0.57 inch on the 4th and 0.38 inch on the 5th. At Killiney the average rainfall for March in the 24 years, 1885–1908, inclusive, was 1.948 inches on 17 days.

Mr. Harold Fayle sends the following report from Sandford Lodge, Ranelagh, Dublin :—

Mean corrected Height of Barometer,	-	29.836 inches.
Highest corrected Reading (15th, 9 p.m.),	-	30.54 ,,
Lowest corrected Reading (6th, 9 a.m.),	-	29.14 ,,
Mean Dry-Bulb Temperature,	-	40.0°.
Mean Wet-Bulb Temperature,	-	38.5°.
Mean Maximal Temperature,	-	46.8°.
Mean Minimal Temperature,	-	35.1°.
Arithmetical Mean Temperature,	-	41.0°.
Highest Temperature in Screen (16th),	-	58°.
Lowest Temperature in Screen (27th),	-	27°.
Lowest Temperature on Grass (27th),	-	19°.
Nights of Ground Frost,	-	15.

Rainfall (on 19 days),	-	-	3.33	inches.
Greatest Daily Rainfall (4th),	-	-	1.35	„
Mean Amount of Cloud,	-	-	78.4	per cent.
Days of Clear Sky,	-	-	2.	
Days of Overcast Sky,	-	-	17.	
General Direction of Wind,	-	-	N.W.	

Dr. J. H. Armstrong reports that at Coolagad, Greystones, Co. Wicklow, 2.89 inches of rain fell on 22 days. The maximal falls in 24 hours were 0.66 inch on the 4th, 0.52 inch on the 10th, and 0.40 inch on the 5th. Snow and hail fell on 8 days. The thermometer rose to 57° on the 16th and fell to 26° on the 31st.

At Auburn, Greystones, Co. Wicklow, Mrs Sydney O'Sullivan recorded a rainfall of 2.37 inches on 21 days, the maximum in 24 hours being 0.53 inch on the 4th. On the 10th the measurement was 0.45 inch.

Dr. F. O'B. Kennedy, Resident Medical Officer, reports that the rainfall at the Royal National Hospital for Ireland for Consumption, Newcastle, Co. Wicklow, was 2.94 inches on 24 days. The largest measurement in 24 hours was 0.67 inch on the 4th. As to temperature, the screened thermometers rose to 56° on the 16th, having fallen to 26° on the 8th. The mean daily maximum was 46.8°, the mean daily minimum was 34.4°, and the arithmetical mean temperature was 40.6°.

The Rev. Canon Arthur Wilson, writing from Dunmanway Rectory, Co. Cork, states that 3.29 inches of rain fell there on 24 days, 0.75 inch being measured on the 8th. The rainfall was 2.62 inches under the average. The rainfall for the first quarter of 1916 at Dunmanway was 11.25 inches on 49 days. The quarter's rainfall was 6.35 inches less than the average of the past 12 years—namely 17.58 inches. The first 11 days were unsettled and cold. After that there was very seasonable weather—bright sunny days with strong N.W. and N.E. winds and occasional showers of rain or hail. Hail showers which fell on the 29th and 30th were heavier, and there was a very sharp frost on the night of the 31st. Some snow fell on the night of the 8th, and thunder was heard on the 4th. This was the third March in succession in which the rainfall has been considerably under average, and the fourth consecutive month with rainfall under average.

PERISCOPE.

" BRITISH."

OBJECTION was taken in Ireland to the inclusion of the word " British " in the title of the Royal College of British Nursing. It was claimed by the President of the Royal College of Physicians of Ireland (Dr. O'Carroll) that Ireland's identity was lost in such a title. Irishmen knew better than the President, and " Shamus," in an interesting article in the *Weekly Irish Times*, pointed out, with great respect to the Chairman, that the word " British " includes Ireland. " The United Kingdom of Great Britain and Ireland is otherwise known as the British Isles. The Royal British College of Nursing would obviously be as incomplete without the Irish branch of the profession as the British Isles would be if Ireland were effaced from the map. The British flag includes the Cross of St. Patrick as well as the crosses of St. George and St. Andrew. We never think of British troops or the British Navy as purely English, or English and Scottish, but as the Navy and Army which belong to the British Isles. This is not a modern idea, nor an English imposition. It is old as history. In the ' De Mundo ' of Aristotle (about 350 b.c.) occurs the passage : ' Beyond the Pillars of Hercules (Straits of Gibraltar), the ocean flows round the earth, and in it are two very large islands called British (Bretanikai Legomenai), Albion and Ierne, lying beyond the Keltoi.' " " Shamus " ends with the query, " How many Irish Doctors are members of the British Medical Association, and how many Irish men and women are proud to be enrolled as British Red Cross Workers? . . . The Ancient Britons inhabited the whole territory of the British Isles." —*The Hospital, April 14th, 1917.*

INFECTIOUS JAUNDICE AT THE DARDANELLES.

LIEUT.-COLONEL C. J. MARTIN, F.R.S., A.A.M.C., Pathologist to No. 3 Australian General Hospital, Lemnos, contributes to the *British Medical Journal*, April 7, 1917, an able article concerning the pathology and aetiology of the infectious jaundice common at the Dardanelles in 1915.

During the autumn of 1915 troops at Gallipoli, and to a

lesser extent in Egypt, suffered from a nearly non-fatal form of infectious jaundice, usually without complete obstruction to the entry of bile into the intestine, and not associated with any tendency to haemorrhages. It appeared to be markedly infectious: some units had 25 per cent. of their strength affected, and many cases occurred amongst patients in hospital for other complaints. The first case occurred in the French lines about August 10th; during September the epidemic spread slowly until the end of that month, when it rapidly extended, reaching its maximum in October. During November it rapidly declined, and was practically over by the end of the year.

Colonel Martin submits, as the result of his investigations, that the picture presented by the infectious jaundice at Gallipoli, and the morbid anatomy, meagre as it is, are more consistent with the view that we are dealing with a hepatitis following a systemic infection than with that of a catarrhal jaundice from plugging of the bile ducts from extension of an inflammatory process from the duodenum.

The reasons which influence him in arriving at this conclusion are briefly:

1. The illness is ushered in by a febrile attack, like influenza, but usually of shorter duration.
2. Jaundice does not occur for some days, and is preceded by swelling and tenderness of the liver.
3. Bile is rarely completely prevented from entering the intestine.
4. The spleen is often enlarged.
5. Albuminuria is not uncommon.
6. Notwithstanding the comparatively slight initial illness, the existence of a serious toxæmia is indicated by lassitude, which endures for some weeks, and evidence of myocardial poisoning.
7. Histological evidence of necrosis of liver cells and inflammation around the portal areas.

The author arrives at the following summary and conclusions:—

1. No parasites were discovered in blood films taken during the disease.
2. Blood cultures were sterile unless the jaundice supervened during an attack of typhoid or para-typhoid.

3. The observations made at No. 3 Australian General Hospital at Mudros do not support the conclusion of MM. Sarrailhé and Clunet at Cape Helles, that the jaundice was merely a manifestation of para-typhoid fever.

4. Bacteriological analysis of duodenal contents removed from patients affords no justification for the view that the jaundice was due to a bacterial infection spreading up the bile ducts.

5. The livers of two patients who succumbed during the convalescent stage of jaundice showed microscopical evidence of hepatitis with necrosis of liver cells.

6. It is pointed out that the infectious jaundice of Gallipoli, although much milder, presents analogies to the severer form, Spirochætosis icterohæmorrhagica; and it is contended that the symptomatology and morbid histology are consistent with the view that it is primarily a systemic infection.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS

“ VAPOROLE ” CHLOROFORM.

“ VAPOROLE ” Chloroform is the name applied to a product recently introduced by Messrs. Burroughs, Wellcome & Co., Snow Hill Buildings, London, E.C. It belongs to that excellent series of “ Vaporole ” medicaments already well-known to physicians and pharmacists. This product is intended primarily for use in aural practice for the relief of earache. The capsule should be broken, and placed in a small vessel (for example, an egg-cup), which is then held close to the ear, to allow the vapour to enter. Its use is contra-indicated in cases of suppuration. “ Vaporole ” Chloroform will also meet the requirements of physicians who order the inhalation of small quantities of chloroform for the temporary relief of asthma, in spasmodic croup, and other similar conditions, thus eliminating the danger of supplying patients with chloroform in bulk. The Vaporoles are issued in boxes of 12: each contains 3 minims of “ Wellcome ” Brand Chloroform.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

JUNE 1, 1917.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XXV.—*Clinical Notes of a Case of Intrathoracic Tumour.* By GEORGE E. NESBITT, M.D. (Dubl. Univ.), F.R.C.P.I.; Assistant Physician, Richmond, Whitworth and Hardwicke Hospitals.

P. B., aged sixty-five, was admitted to the Whitworth Hospital on the 25th of November, 1916, complaining of bad cough and some difficulty in breathing.

The history of his illness was obscure. He said, though he had always had “a bit of a cough,” he had enjoyed good health, except for an attack of facial paralysis, about six years ago, which had left some traces in the shape of slight contracture and deformity of the right side of his face.

On cross-examination, however, he admitted that his cough had got distinctly worse about three months previously; that recently it had been very severe and constant; and that he brought up a good deal of spit—on one occasion blood-tinged.

Although his temperature was 101° when his daughter insisted on his seeking advice, he complained singularly little, and he was with difficulty persuaded to come into hospital.

Next day I had an opportunity of examining him thoroughly.

He was a thin, scraggy, untidy-looking individual, and was decidedly pale in colour. He was running an evening temperature. The various systems, with the exception of the chest, were not markedly abnormal, but here some anomalous symptoms were at once detected.

The chest was fairly well shaped, but exhibited a very small range of expansion (about three-quarters of an inch), the diminution being perhaps more marked on the left side. Vocal fremitus was considerably diminished over the left lung. On percussion both lungs were resonant, but there seemed a slight difference of pitch over the upper lobes—the left side being slightly higher. Resonance at the bases was hard to demonstrate and seemed defective on the left side. On auscultation there was entire absence of breath sounds over the left lung—those over the right lung were loud and harsh, but not accompanied by any adventitious sounds.

The apex beat was in the nipple line, cardiac dulness being slightly increased to the left, and the heart sounds were rather feeble. The pulse was 80, and showed some thickening of the arterial wall.

The remarkable phenomenon at this stage was the combination of resonance with entire absence of breath sounds. On listening to the chest the first impression gained was that we were dealing with some condition causing collapse of the lung—*e.g.*, effusion or pneumothorax. These, however, could soon be excluded. My first view was that something had completely blocked the left bronchus. There was, however, no history of gradual stridor, and I could not imagine that a lung with the bronchus occluded would long remain resonant. I therefore fell back on the theory that the left diaphragm was not acting. This view was supported by the almost complete absence of movement in the left side of the chest and abdomen. Assuming this to be the explanation of the signs observed, the diagnosis of something paralysing the phrenic nerve was a logical sequence, and from this to a diagnosis

of malignant growth in the left mediastinum was an easy transition.

At this point an *x-ray* examination was kindly made by Dr. Hardman. He reported "a large sharply-defined shadow spreading out from left root and extending up into apex of lung—suggestive of new growth."

On a subsequent careful examination no movement of the left diaphragm was observed and practically no increased illumination of the left lung on inspiration.

During the next ten days the physical signs changed rather quickly. Dulness appeared in front opposite the root of the lung, and spread rapidly over the chest. The signs were now those of a pleural effusion. An exploring needle, however, revealed pus. Sir Thomas Myles then drained the chest, and, as he had confirmed the presence of pus by needle, immediately before operation, was surprised to withdraw a large quantity of serous fluid.

On further gentle exploration a small localised collection of pus was evacuated—whether an empyema or a lung abscess could not be definitely ascertained. During the following week the patient ran a satisfactory course, but then, without warning, he collapsed and died.

Autopsy revealed a neoplasm (lympho-sarcoma, specimen shown) involving the left bronchus (which it had almost completely occluded) and branching radially outwards through the lung. The pus was a small empyema. No secondary growths were found.

ART. XXVI.—*Tetanus.*^a By JOHN S. M'ARDLE, M.Ch. (*Hon. Causá*), R.U.I. F.R.U.I.; F.R.C.S.I.; Professor of Surgery, National University of Ireland; Senior Surgeon, St. Vincent's Hospital; Consulting Surgeon, National Hospital, Holles Street, and Children's Hospital, Temple Street, Dublin. (Illustrated.)

(Continued from Vol. CXLIII., No. 545, May, 1917, page 305.)

IN my last lecture I dealt with the cause and symptoms of tetanus. To-day I wish to direct your attention to the treatment of this trouble.

^a The substance of a Clinical Lecture.

Before entering on details of our present methods let me remind you that with the exception of the spores of malignant œdema those of tetanus are, perhaps, the most resistant : the former can withstand steam at a temperature of 97.5 C. to 98.0 C., while under the same condition the spores of tetanus succumb in five minutes ; thus, sterilisation of articles infected with tetanic organisms can be readily brought about. When, however, we come to deal with living tissues invaded by bacilli it is quite a different matter, and innumerable are the ways in which different workers attempt to render innocuous the germs, which multiply very rapidly in a favourable medium and in the absence of oxygen. We know that $\frac{1}{1000}$ corrosive sublimate solution requires three hours to kill the spores under the most favourable circumstances, but when 0.5 per cent. hydrochloric acid solution is added, half-an-hour suffices to limit the action or destroy entirely the spores of tetanus.

TREATMENT.

Anti-toxic.—The first step in the treatment of patients whose wounds are soiled by clay is the administration of antitoxin. Now this may be done by the subcutaneous, intramuscular, intravenous, intraneural, subdural or intracerebral method. If the case is seen within a few hours of the accident the subcutaneous method has a fair chance of doing all that is required of the anti-toxin, as instanced by the following case :—Sir A. B. sustained a fracture of the femur during manœuvres in the Phoenix Park ; within one hour he was in 96 Lower Leeson Street, and I injected him with a 9 cc. Pasteur tetanus antitoxin before removing the temporary dressings. The upper fragment of his right femur had gone through his riding breeches and right into the soil, which completely covered the bone. There was much difficulty in cleansing the parts, but ultimately we succeeded in removing much of the clay and other materials which had impregnated the wound.

Reduction of the fracture was carried out under chloro-

form anaesthesia, and the limb was put up in a Lane's splint. Profuse discharge took place, and Professor McWeeney found in this myriads of tetanus bacilli; but, notwithstanding this, not the slightest sign of lockjaw appeared; and later, although I was obliged to plate the fracture, no trace of trouble arose, and the patient is now, after months of duty, at the front, fit and well.

Now subcutaneous injection worked well in this case, because the antitoxin had already entered the lymph and blood-stream many hours before the tetanus bacilli in the wound had time to develop toxin in any quantity.

The intra-muscular injection has no advantage over the subcutaneous, as absorption from muscle tissue is rather slower than from the subcutaneous lymph channels. It is quite otherwise with the intravenous injection, after which the blood and lymph become atoxic within half an hour, according to experiments carried out by Bouson. When some hours have elapsed between the time of accident and the initial treatment, the intravenous method should be adopted, as in the case you have seen in No. 14 bed. In this case the rheumatic pains, which so often mislead, were the only trouble—no locking of the jaw, no risus sardonicus, only just a slight stiffness of the trapezius and arching of the neck.

Subcutaneous or intramuscular injection would be too slow to overtake and combat the toxin, and so I carried out intravenous injection, at the same time injecting curarin to prevent laryngeal spasm.

The next case to which I wish to draw your attention was in No. 8 bed, a compound fracture-dislocation of the ankle. Several days had elapsed from the time of injury before I saw the patient. He had then a gangrenous foot, and protruding through the skin at the inner and anterior part of the ankle was the fractured end of the tibia, covered by a foul-smelling discharge. The patient was in great distress, opisthotonus having already set in, with some transient locking of the jaw.

I injected the nerves at D, Fig. 1, and B, Fig. 2; in-

jected $\frac{1}{32}$ grain of curarin subcutaneously, and then amputated the leg at the seat of election.

This man, who is a carman in Wicklow, now carries on his avocation as if he had never been injured.

There is no doubt that the way to stop the passage of the toxin from tetanic areas is to place the antitoxin in the nerve routes; but where the infection has forestalled us, and the toxin has reached the nerve centres, are we completely ousted in the fight for our patient? Certainly not.

To reach the fluids bathing the central nervous system, subcutaneous, intramuscular, and even intravenous introduction of antitoxin may not avail; but there is still left to us the cerebro-spinal fluid as a means of conveying antitoxin into the neural cells affected by tetanus toxin.

It is well known that diffusion from capillaries, whether vascular or lymphoid, does not readily take place into cerebro-spinal fluid; and so, once the tetanus toxin engages the nerve centres, nothing short of subdural injection is of any service, and the point C, Fig. 2, is the seat of election for puncture.

Before introducing the serum 6 or 8 ccs. of cerebro-spinal fluid should be allowed to escape.

Figs. 1 and 2 show the points for neural injection, according to the site of the wound, because the toxin travels along the nerves. The vessels, the lymphatics and the general connective tissues have nothing to do with its dissemination.

TREATMENT.

Local.—Now, as regards the local treatment, the results obtained in this war have demonstrated what I have long emphasised—that open-wound treatment with free admission of air to the affected parts is attended by the happiest results.

Deep wounds should be opened up, intramuscular planes freed of any collections of fluid, blood or otherwise, and then thoroughly saturated with hydrogen peroxide. By this means, although you may not kill the spores, you

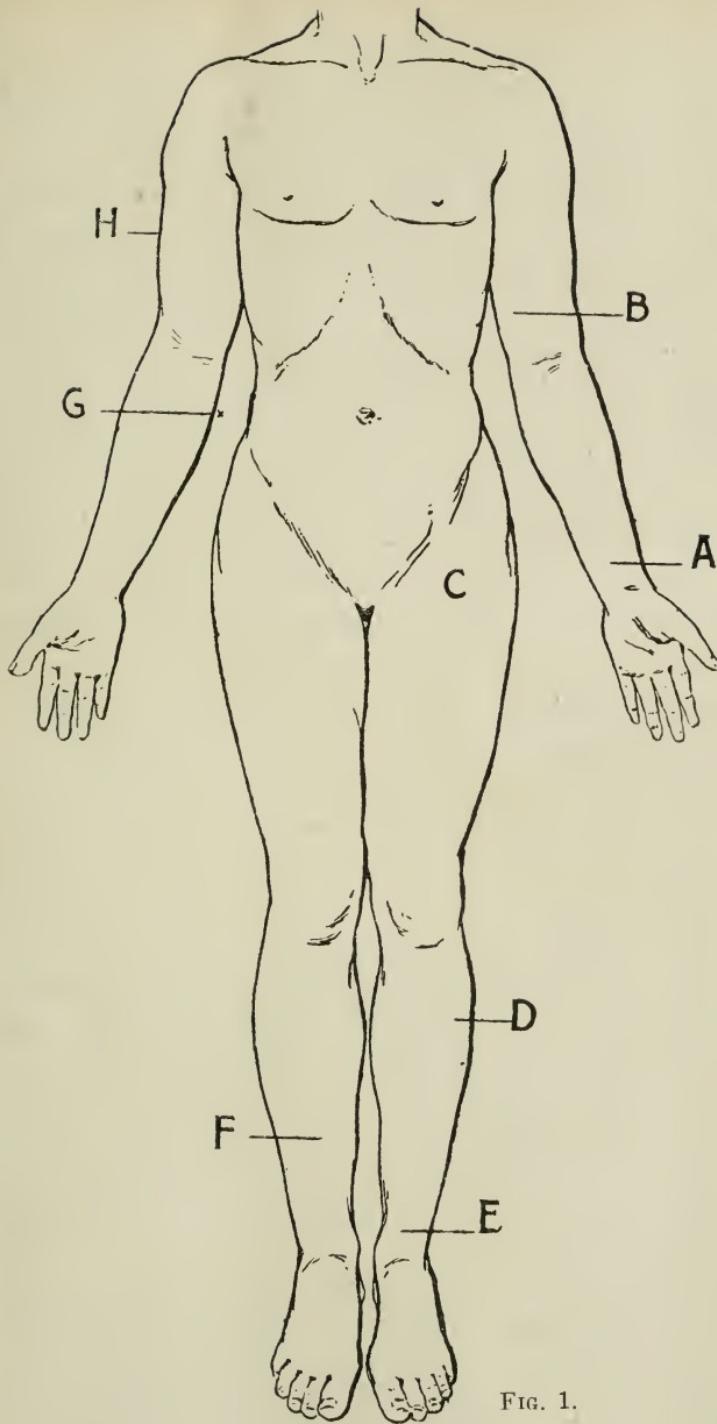


FIG. 1.

- A. B .For wounds of palm and forearm.
- C. For wounds of joint of knee.
- D. E. F. For wounds of dorsum of foot and front of leg.
- G. For wounds of inner part of hand.
- H. For wounds of outer part of hands.

prevent any harmful development, and allow the antitoxin time to pervade the tissues you wish to conserve.

Free opening of the wound, exposure of all perineural tissues, removal of all effusions, blood or otherwise, saturation of the entire area with hydrogen peroxide, and then continuous irrigation with magnesium chloride solution. Any dressings applied should be light and gauzy, so that the air may freely reach the wound.

Specific.—There can be no doubt as to the efficacy of the anti-toxic treatment of tetanus. The records shown in my last lecture place beyond doubt the value of early injection of anti-tetanic serum, and it is our duty to study the methods of utilising this invaluable remedy. Anti-toxic serum has been employed by the following methods :—

1. Subcutaneous.
2. Intramuscular.
3. Intravenous.
3. Perineural.
5. Intraneural.
6. Spinal.
7. Intracerebral.

Of these, one and two are of little real value unless that by accident the nerve primarily affected is in the near neighbourhood of the puncture. If the intravenous injection is early, the antitoxin may permeate the central nervous system, and thus neutralise the effects of the tetanic poison, which takes some time to reach and combine with the brain cells corresponding to the nerves primarily affected.

The figures herein shown mark the points for perineural and intraneural injection. Now, if a case is seen early and injection is forthwith carried out, infiltrating the nerve or its perineurium with antitoxin, the mortality should be reduced to nil. When the case is of longer standing, as in many of my cases, the only chance of success is in lumbar or cervical puncture—the former, when the wound is in the lower extremity; the latter, when the upper is affected.

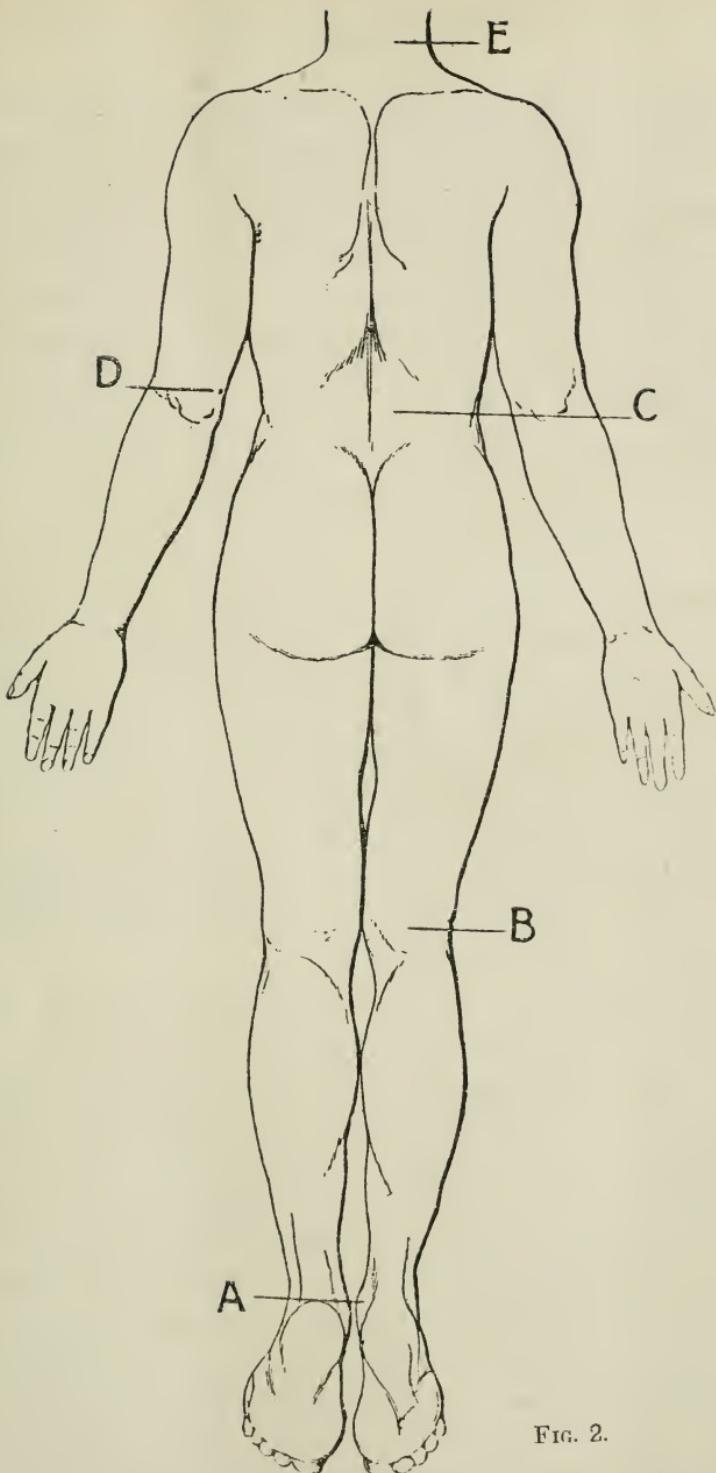


FIG. 2.

- A. For wounds of plantar area. B. For wounds of calf area.
C. Lumbar puncture. D. Ulnar puncture.
E. Cervical puncture.

When the case seems quite hopeless, success has been achieved by infiltrating the brain tissue itself with anti-toxin. The procedure is simple in the extreme. The skull is opened by a small drill, or even an awl, and through this opening a hypodermic needle is passed, and the injection carried out. The contents of the syringe must not be lodged in one part of the brain, but by moving the needle to and fro should be made to infiltrate a wide area.

In order that toxin diffused throughout the body may be neutralised, a similar diffusion of the antitoxin must be effected. The subcutaneous injection of anti-serum, however, produces this result only slowly, about two days being required before the antitoxin content of the blood reaches a maximum (as Henderson Smith showed for anti-diphtheritic serum, and Dehne and Lamburger for tetanus antitoxin); hence, in order to ensure rapid neutralisation of the circulating toxin, antitoxin should be administered intravenously. It has been found experimentally that half-an-hour after an intravenous injection of antitoxin both blood and lymph are rendered atoxic (Ransom).

In reference to post-operative tetanus, my experience tallies with that of Browning (*British Journal of Surgery*, July, 1916), who writes:—

“The occurrence of tetanus following surgical procedures—most frequently gynaecological operations—has raised a number of points which have not been satisfactorily settled. E. Koch drew attention to imperfectly sterilised catgut as a source of infection; and he produced tetanus in mice by inoculation with portions of ligature which were found surrounded by pus in a case dying from tetanus after abdominal hysterectomy for impacted fibroids. This work served the useful purpose of emphasising the necessity of securing sterile gut, and the difficulties attendant thereon. It is well known that organisms may survive in gut which has been boiled for half-an-hour in absolute alcohol. It is probable, however, that a variety of causes are responsible for post-operative tetanus.”

As regards the general medical treatment, I am quite in accord with the following statement of Dr. Marley Blake, President, Irish Medical Association, in describing a very successful case of his, and I give the case as it appeared in the *Medical Press and Circular* :—" His masseters were tight set, he could only open his mouth very little, and could barely protrude the tip of his tongue. He had fairly well marked opisthotonus. The muscles of his thighs were rigid, the knees could not be bent, he complained that his abductor and adductor muscles could not work for him. The least touch, especially on the abdomen, threw him into severe spasms. Now, and indeed all through the progress of his illness, the muscles of deglutition were unaffected, and he took liquid nourishment freely through a feeding-cup without any laryngeal spasm following. There was no history of any cut or prod of a thorn or any injury to spine, and though the case was manifestly tetanus I was at a loss at first to find the point of entry of the germ. He had been tarring sheds or outhouses, and his hands were soiled with tar ; when I had them thoroughly cleansed I found a deep hack or crack at the base of the right forefinger reaching down to and showing the raw flesh beneath. I carefully cleansed this with soap and water, opened it freely and swabbed it out first with peroxide of hydrogen, and then with liquor iodi fortis, and dressed it with cyanide gauze. On Sunday, the 7th, I had the advantage of the attendance and advice of Dr. Joseph O'Brien, of Dungdalk, in consultation. He had quite recently seen two cases of tetanus in his practice. I injected 1,500 units anti-tetanus serum intramuscularly in various places twice a day—viz., into the pectorals, latissimus dorsi, and abdominal muscles, and twice daily gave him hypodermically 15 drops of a two per cent. solution of carbolic acid, and gave him 25 grs. of potassium bromide, 20 grs. of chloral and 15 grs. of hexamethylene-tetramine every third hour.

" The second serum injection seemed to lessen the spasms, and he got some sleep. After giving him ten

injections, I gave it to him only once a day. He had twelve injections of 1,500 units each in all. I continued the sedative mixture for ten days after ceasing the serum treatment. Patient was a strong, muscular young man, aged 19, and very intelligent. He found so much relief from the serum that he was most anxious not to have it stopped as soon as it was. He had been working in a garden, digging and clearing out drains leading from the down rainpipes of a large mansion house, and had to lift the mould in his hands, and probably it was in this way the germ gained access. He is now up daily and eats well; he can open his mouth, but not quite to its full extent. The muscles of his legs are still very stiff and weak, and his knee reflexes somewhat feeble."

In concluding this lecture, let me call your attention to the case in No. 12 bed in St. Patrick's Ward. This soldier had a shrapnel wound of the side of the face, followed by locking of the jaws. For months he has lived on suction, and in the end was discharged the army. His was not a case of tetanus: it was merely a continuous reflex spasm of the masseter due to inflammation round an unerupted molar tooth, the removal of which has allowed free movement of the jaw. I show you the *x-ray*, and the molar extracted after drilling the maxilla.

ART. XXVII.—*The Influence of Environment on the Morphology of the Acne Bacillus.*^a By W. M. CROFTON, M.D.; Lecturer in Special Pathology U. C., Dublin; Visiting Physician Royal National Hospital for Consumption in Ireland; Pathologist Dr. Steevens' Hospital; late Temp. Capt. R.A.M.C.

OWING to the rapidity with which one generation succeeds another schizomycetes form excellent material for the study of the influence of environment on morphology and method of life.

^a Read before the Section of Pathology in the Royal Academy of Medicine in Ireland on Friday, April 27, 1917.

The decrease of toxicity (*i.e.*, capacity for breaking down living protoplasm) of a microbe when made to lead a saprophytic existence and the increase of toxicity on passage through a series of susceptible animals illustrate well the influence of environment on mode of life.

The survival of the fittest can be studied by growing a strain of microbes on a series of culture tubes containing increasing quantities of some inhibitory substance. As the amount of inhibitory substance increases fewer and fewer colonies grow, only the especially vigorous microbes continuing to be able to survive and to reproduce themselves. The influence of environment on morphology is well illustrated by the acne bacillus.

The acne bacillus, as seen in smears of sebaceous material from the skin, is a short, plump Gram-positive bacillus.

Some years ago I made slope cultures of such material on 2 per cent. glucose-agar and serum-agar and incubated them anaërobically. On the glucose-agar colonies of Gram-positive bacilli grew and also colonies of staphylococci; on the serum-agar only staphylococci grew. It struck me that it was possible that the medium might have had some influence on the shape of the bacillus, that some of the colonies on the serum medium might be really those of short acne bacilli which looked like cocci. I therefore made a culture of the bacillus from the glucose-agar on to the serum-agar and incubated anaërobically. Only cocci grew. These cocci were then transferred to glucose-agar and only bacilli grew. The experiment was repeated several times, so that there could be no doubt about the matter. Both mediums, of course, grow staphylococci equally well. If the sebaceous material is sown on + 30 agar slopes and incubated anaërobically the growth of the skin staphylococci will, as a rule, be completely inhibited if the oxygen has been sufficiently removed. Towards the end of a week small colonies appear which increase in size until at the end of three weeks they are several millimetres in diameter. Their appearance is

quite characteristic. When typical they have the shape of the male nipple, buff coloured in the centre, shading off to a creamy brown towards the periphery. If these cultures are now incubated aërobically, the colonies increase rapidly in size, but the new growth consists entirely of cocci surrounding the bacilli like a halo, or if the bacilli are subcultured on to + 30 or + 10 agar slopes and grown aërobically they grow as cocci, the colonies being indistinguishable from those of *Staphylococcus albus* as are the cocci themselves. If the Gram-positive bacilli are subcultured on to + 30 agar and grown anaërobically they sometimes grow as Gram-negative bacilli, these also grow as Gram-positive cocci if grown aërobically. Even if grown anaërobically they will grow as cocci on + 10 agar. So that it is evident that both anaërobic conditions and a suitable medium are necessary for the development of the bacillary form.

The alternative possibility that staphylococci might survive in the acne bacillus colonies on the + 30 agar and develop under aërobic conditions is ruled out of court by the glucose-agar serum-agar experiments and by the fact that when the colonies are composed of Gram-negative bacilli no Gram-positive cocci could be seen on staining.

The method of growing on + 30 agar makes the isolation of the bacillus easy and certain. This medium should contain 3 per cent. of agar as the acidity makes the medium too soft if the usual amount is used. If the broth is made from heart muscle the medium is usually from + 20 to + 27, so that only a little extra acid need be added.

ART. XXVIII.—*Typhoid Fever, with Special Reference to its Early Diagnosis.* By WILLIAM FREDERICK WICHT, B.A., M.B., B.Ch., B.A.O., Univ. Dubl.

TYPHOID FEVER is a specific infectious fever, characterised by a lesion of the intestine and a rose-coloured rash, which rash appears in successive crops.

It is caused by the *Bacillus typhosus* (Eberth's B.). It is a disease of temperate climates, with the natural consequence that in this country it occurs chiefly in the Autumn. It is rare in infancy and in the aged, the greater number of cases occurring between the ages of fifteen and twenty-five. Both sexes suffer equally. It is widely distributed throughout the world, no race or creed being exempt. Certain individuals and families, however, seem to be more or less immune to the disease. One attack usually confers immunity. The main factors of infection are bad drainage and contaminated water supply, filth, overcrowding and bad ventilation being accessories in lowering the resistance of those exposed to infection.

Formerly it was very common in armies, though troops on the move were not much affected. In the South African war typhoid accounted for 8,225 lives, whereas bullets, &c., caused only 7,582 deaths. Thanks to the efforts of Sir A. E. Wright and his anti-typhoid vaccine true typhoid is practically non-existent in the British Army to-day.

As regards *immunity*, though the immune substances disappear from the blood shortly after recovery the relative immunity lasts a long time, frequently for life. Cole has explained this experimentally. He showed that animals which had once reacted to the typhoid infection react in throwing out the immune substances more quickly and in larger amounts when danger again threatens.

Typhoid fever was first described by Petit and Seeres in 1813 as an "entero-mesenteric fever." It was not till 1829, however, that it was called "typhoid" by Louis in his great work. At that time typhoid, which was prevalent in Paris and many other European cities, was believed to be identical with the continued fever of Great Britain, which in reality was typhoid combined with typhus. In 1837, Gerard, a pupil of Louis, in the *American Journal of Medical Sciences*, clearly and fully dis-

tinguishes between typhoid and typhus, both anatomic ally and clinically. A. P. Stewart was largely responsible for the recognition of the differences between the two in Great Britain, but it was not till 1849 and 1850 that Jeuner finally decided the point.

The Bacillus typhosus is a short, thick, flagellated motile bacillus with rounded ends. It is killed in ten minutes by a temperature of 60° C., but can resist a temperature of 50° C., also drying for months. Direct sun rays will destroy the bacilli in from four to ten hours, while bouillon cultures are destroyed by 1 in 200 carbolic acid and 1 in 2,500 corrosive sublimate.

In practically all cases the bacilli enter the circulatory blood stream and are carried throughout the body. They occur in the urine in about 25 per cent. of the cases, and can invariably be separated from the faeces. They are also present in the rose-spots and in the sputum. They may be present in the stools without the patient showing any symptoms (typhoid carriers).

At autopsy the bacilli are found to be most numerous in the mesenteric glands, spleen and gall-bladder, but are very widely distributed, being found even in muscles, uterus, &c.

In sterile water the bacilli retain their vitality for weeks. In conjunction with saprophytes, i.e., under ordinary conditions, they disappear in three days, according to Jordan. In milk they undergo rapid development, changing their appearance; they may persist for three months in sour milk, and for several days in butter made from infected milk. Robertson states that they can survive for several months in the upper layers of the soil.

Contagion may take place directly through the air, though this is very improbable, the chief modes of propagation being water, food, fingers and flies, also "typhoid carriers." Eberth's bacillus has the power of persisting for years in the bile passages and intestines of individuals in good health.

Typhoid fever may attack the human body in several different ways, *e.g.* :—

(1) Ordinary typhoid with marked enteric lesions. The great majority of cases are of this kind, though the spleen and liver are also enlarged.

(2) Cases in which the intestinal lesions are slight. The disease may be a general septicaemia with high fever, delirium and severe toxic symptoms, or it may cause lesions of the liver, gall-bladder, pleura, meninges and even the endocardium.

(3) Mixed Infections. In ordinary typhoid secondary infection with *B. coli*, strepto- and staphylo-cocci, or even the pneumococcus, is quite common.

(4) Local Infections. Sometimes cases occur of cystitis or cholecystitis due to typhoid infection without any evidence of a general infection. Finally :—

(5) Terminal Infections. In rare cases, Eberth's bacillus causes a fatal infection towards the end of other diseases, the subjects being probably typhoid carriers.

The chemical nature of the toxin produced by the *B. typhosus* is not yet known, though Maris, a Frenchman, found that patients suffering from typhoid showed toxic symptoms very similar to those produced by digitalis poisoning. I will refer to this again when discussing the early diagnosis of typhoid by means of atropin sulphate.

As regards the morbid anatomy.—A catarrhal condition is found throughout the bowel (large and small). Specific changes in the lymphoid elements, best marked in the lower part of the ileum, are also present. These alterations pass through four distinct stages :—

- (1) Hyperplasia.
- (2) Necrosis and sloughing.
- (3) Ulceration.
- (4) Healing.

A remarkable fact about typhoid ulcers is that no matter how extensive the ulceration, stenosis of the bowel never results.

Some of the more common complications associated with typhoid fever are perforation of the bowel, haemorrhage, infarction of the spleen, possibly areas of necrosis in the liver, cystitis, not infrequently cardiac disorders, and typhoid pyæmia commonly. Of the last mentioned, "boils" and otitis media are common sequelæ.

Typhoid fever has an incubation period of from eight to twenty-three days. During this time the patient very likely complains of a feeling of lassitude and inaptitude for work. Rarely the onset is abrupt. The symptoms gradually get worse till the patient finally takes to bed. For the next week there is generally a steady rise in temperature, the temperature being a degree or so higher each successive evening. Pulse full, of low tension and often dicrotic. Tongue furred, abdomen distended and tender.

In the following week all these symptoms are aggravated. During the third week there is a gradual decline in the fever. Pulse 110 to 130 in average cases. Marked weakness and loss of flesh.

In the fourth week convalescence usually begins. All symptoms abate and finally disappear.

During the fifth week relapses may occur, also many of the sequelæ, e.g., otitis media.

Typhoid fever, though the most common of all the continued fevers, requires a careful consideration of the signs and symptoms for diagnostic purposes.

The *B. typhosus* may be isolated from the faeces, urine, sputum, or rose-spots.

Widal's Agglutination Test is also absolutely diagnostic. This test may be carried out in two ways :—

(1) *Macroscopically*, or in a test tube. Here the agglutinated bacilli will settle down as a precipitate and can be seen with the naked eye, or—

(2) *Microscopically*.—In this case a hanging drop is made and the agglutinated bacilli are examined for with a microscope. Widal's test is so well known that I will confine myself to the above brief statement and not enter into the minute details.

Another method, which gives an earlier diagnosis than even Widal, is the *Ophthalmic-Reaction*. This test is carried out in a manner similar to the ophthalmic-reaction for tuberculosis. The local reaction, however, is not so severe as in the case of tuberculosis, with a consequent diminution of danger of permanent damage to the eye.

The atropin method for early diagnosis of typhoid is only in its infancy. Briefly, the history of the test is as follows :—A Frenchman, Maris by name, noticed that the toxæmia produced by typhoid was very similar in character to digitalis poisoning. Working on these lines he found that the injection of large doses of atropine sulphate (gr. $\frac{1}{33}$) produced no marked increase in the pulse rate of typhoid patients. In fact, it often produced a retardation, contrary to what happens in the normal subject, where the pulse rate is increased from the normal 72 up to 110 or even 120 beats per minute. He found this test very reliable, and also claims that it gives a positive reaction long before Widal does. The great disadvantage of this test, of course, is that in fever cases the pulse rate is already greatly increased.

We tried atropine injections for the early diagnosis of typhoid in Sir Patrick Dun's Hospital and found it very satisfactory. The first case it was tried on was a woman, M.M., aged 27. She was admitted to hospital on December 3, 1916, complaining of headache, heat all over, and feeling generally very sick. Suspecting typhoid as the probable cause of the trouble $\frac{1}{33}$ gr. of atropine sulphate was injected hypodermically on December 6, at 2.30 p.m. Below I give the pulse rate at various times after injection.

Time					Pulse Rate per Min.
2.30 p.m.	-	-	-	-	92
2.45	„	-	-	-	96
3.5	„	-	-	-	98
3.15	„	-	-	-	96
3.25	„	-	-	-	96

<i>Time</i>						<i>Pulse Rate per Min.</i>
3.35	,	-	-	-	-	98
3.45	,	-	-	-	-	96
4.0	,	-	-	-	-	92
4.30	,	-	-	-	-	90
5.0	,	-	-	-	-	98
5.30	,	-	-	-	-	95 etc.

From the above it can be seen that there was no marked increase in the pulse rate. On the same day a "Widal" was done and proved positive to typhoid to 1 in 40.

On December 9 another administration of $\frac{1}{30}$ gr. atropine sulphate was given. In this case there was even a slight decrease in the pulse rate, as is shown below :—

<i>Time</i>						<i>Pulse Rate per Min.</i>
2.35 p.m (time of injection)					-	96
3.50	,	-	-	-	-	96
3.0	,	-	-	-	-	92
3.10	,	-	-	-	-	90
3.20	,	-	-	-	-	96
3.30	,	-	-	-	-	88
3.40	,	-	-	-	-	86

The next case on which this reaction was tried was B. M., aged 11 months, daughter of above-mentioned case who was nursing her up to December 3, 1916, on which date the mother was admitted to hospital.

Having ascertained the relationship between the two cases, the child was admitted to hospital on December 8. On December 9 $\frac{1}{30}$ gr. atropine sulphate was given hypodermically at 3.20 p.m. Below is a table illustrating the pulse rate at various times after injection.

<i>Time</i>						<i>Pulse Rate per Min.</i>
3.20 p.m.	-	-	-	-	-	148
3.50	,	-	-	-	-	140
4.0	,	-	-	-	-	144
4.20	,	-	-	-	-	128

<i>Time</i>					<i>Pulse Rate per Min.</i>
5.0	,	-	-	-	128
5.30	,	-	-	-	118
6.0	,	-	-	-	116
10.0	,	-	-	-	120

As can be seen from the above that here also an actual decrease in pulse rate ensued.

I may state that in both cases the disease ran a typical course, the mother being discharged on January 22, 1917, and her child, who had a milder attack, on January 3.

I tried the effect of atropine sulphate on myself, and on February 24, 1917, gave myself $\frac{1}{30}$ gr. hypodermically. Below I give a table illustrating my pulse rate after injection.

<i>Time</i>					<i>Pulse Rate per Min.</i>
9.0 p.m. (time of injection)	.	-	-	-	78
9.20	,	-	-	-	80
9.40	,	-	-	-	96
10.0	,	-	-	-	104
10.30	,	-	-	-	90
11.0	,	-	-	-	86
12.0	,	-	-	-	76

Taking everything into consideration my pulse rate showed a marked increase, as was expected.

I think that all this certainly shows that atropine used hypodermically can be of great value for the early diagnosis of typhoid. The average practitioner has not got a pathological laboratory at his disposal for carrying out complicated tests. All that is required for the atropine test is a tube of atropine sulphate tabloids and a hypodermic syringe. This very simplicity is in my opinion one of the greatest recommendations of the atropine test. Further, the effects of the atropine pass off comparatively quickly, and even when the reaction has reached its highest point of activity the patient is only very slightly inconvenienced.

The mortality in typhoid varies greatly, and in making

a prognosis various points should be taken into consideration, and the pros and cons carefully weighed. The mortality is greater in women than in men. Early involvement of nerves, low muttering delirium, perforation, &c., all add greatly to the gravity of the disease. It must also be borne in mind that sudden death, possibly due to heart failure, but often difficult to explain, may occur at any time during the course of the affection.

In cities the number of typhoid cases is directly proportionate to the inefficiency of the drains and water supply. It is more prevalent in the country, due to greater risks of infection of water supply. To effectually stamp out typhoid it is essential that, first, all cases should be recognised early, also typhoid carriers; and secondly, all typhoid bacilli should be destroyed as they leave the patient's body, by disinfecting stools, urine, sputum, and any objects contaminated by them.

Absolute isolation of the patient is not necessary, though advisable. All water, milk, oysters, &c., should be boiled if there is any chance of them being contaminated. A great prophylactic treatment is inoculation with dead typhoid bacilli as described by Sir A. E. Wright. The inoculations increase the bactericidal and agglutinating powers of the blood, and so confer partial if not complete immunity on the subject.

The essentials of good treatment for typhoid cases are careful nursing and a well regulated diet; the diet should be mainly liquid, though a soft diet is often permissible. It is important to include as much carbohydrate as possible in order to spare the body proteins. Eight to twelve ounces of whisky in the twenty-four hours are often very useful, as alcohol helps to prevent wasting, and also acts as a cardiac stimulant. Cold sponging or tepid baths may be necessary for hyperpyrexia. As regards drug treatment hexamine—20 to 30 grs. daily—after the second week, is by far the most useful, though an acid mixture may be given often with great advantage to the patient.

All special symptoms should be treated as they arise. For instance, for toxæmia give plenty of water; for delirium give morphine; for diarrhoea give starch and opium enemata, &c.

During convalescence the patient should be kept quiet, as undue excitement may cause a recrudescence of the disease. Plenty of fresh air should be allowed, but no solid food until the temperature has been normal for at least ten days. Finally, no patient should be discharged until it is certain that he cannot infect others.

ART. XXIX.—*Nephritis after Burns.** By SIR JOHN MOORE, M.A., M.D., M.Ch., D.P.H. Dubl.; D.Sc. (*Hon. Causâ*), Oxon.; F.R.C.P.I.; Honorary Physician to H. M. the King in Ireland; Senior Physician to the Meath Hospital and County Dublin Infirmary.

IN a very able communication on “Nephritis,” read before the Section of Pathology in the Royal Academy of Medicine in Ireland on Friday, January 12, of the present year, and published in the April number of this Journal, my colleague, Dr. William Boxwell, Physician to the Meath Hospital and County Dublin Infirmary, stated that “once in a way it”—that is, nephritis—“follows an extensive burn, though I do not remember having seen such a case.”

In the light of this remark by Dr. Boxwell, the following case may prove of interest.

About midday on Friday, March 9, 1917, while going my morning round, I received an urgent telephonic message to visit an elderly member of the medical profession in Dublin, who had been seriously burned. On hurrying to his residence, I found Dr. S. M., aged eighty-seven years, in a state of considerable mental excitement, exclaiming repeatedly that he was not suffering from

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland on Friday, May 11, 1917.

"shock." He reminded me that he was born on February 1, 1831, so that he had entered on his eighty-eighth year.

It appeared that about 10 a.m. he had got out of bed, and preparatory to dressing proceeded to warm himself by standing with his back to a brisk fire, clad only in his night-shirt. Incidentally it may be mentioned that the forenoon of the 9th of March was bitterly cold, snow was falling in light showers, borne on a strong easterly wind. There is no doubt that the unfortunate man's night-shirt was drawn towards the grate by the draught, and so set on fire. The doctor was heard shouting in the hall, into which he ran on perceiving what had happened. His maid-servant rushed downstairs to his assistance and was horrified to find him literally in flames. With great presence of mind she rushed into his bedroom—the front parlour—seized a blanket and wrapped him in it in a shorter time than that in which she could afterwards describe what took place. To her presence of mind and promptness the doctor undoubtedly owed his escape from sudden death.

On his own initiative, he had cold wet cloths applied to the burnt surface and he took an opiate.

When I arrived he was fairly easy, so without waiting to strip off the dressing, I hastened to fetch Lieut.-Colonel William Taylor, P.R.C.S.I., having sent for materials to prepare "Carron Oil" as a first-aid dressing. Surgical advice being at hand, I refrained from subjecting an old man to the fatigue of a double examination.

On Mr. Taylor's arrival we found that there were extensive burns of the third degree—for the sensory nerve-endings were evidently involved—implicating the back of the chest, the shoulders, and the right arm. There were minor lesions on the hands and about the occipital region.

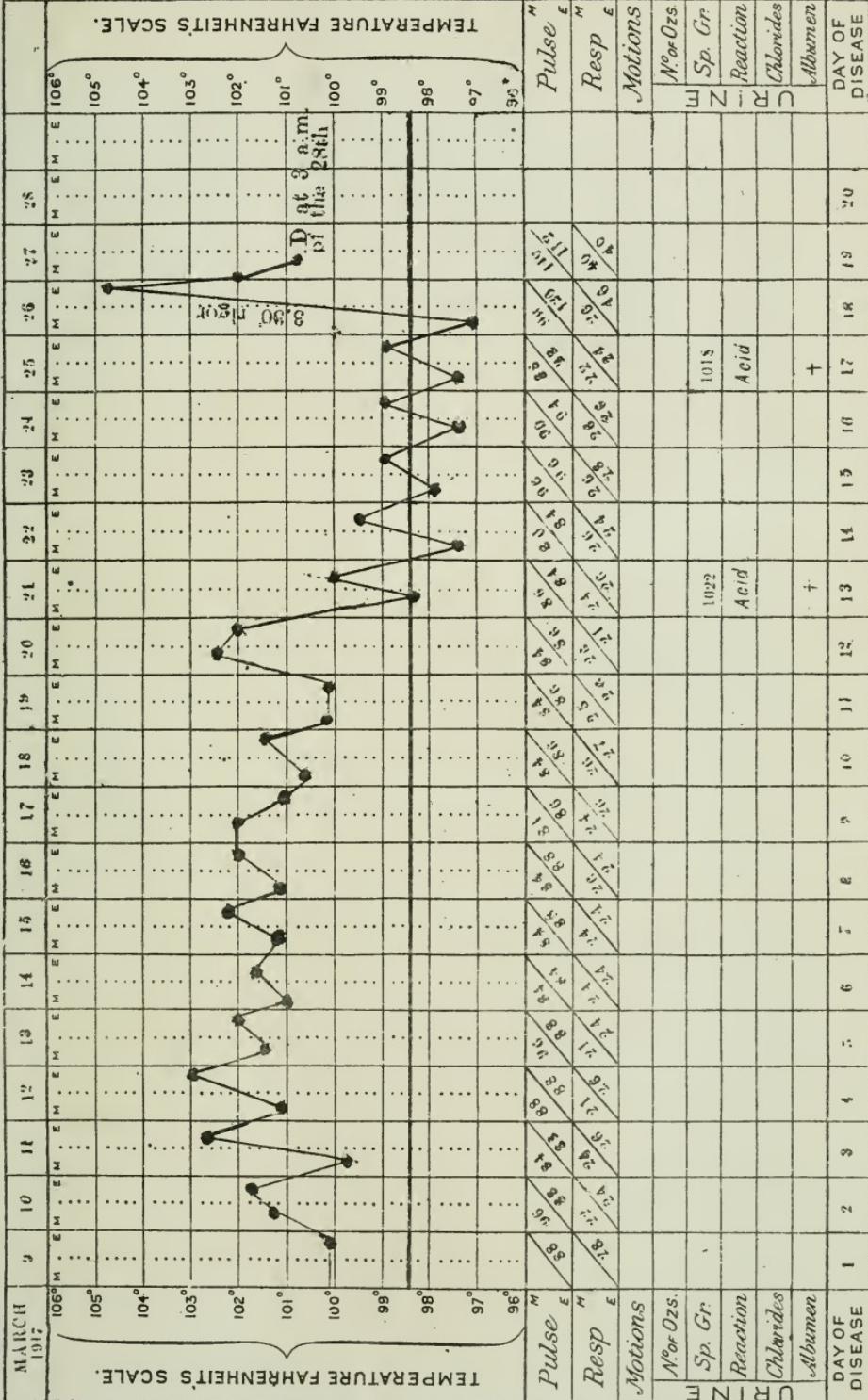
As the materials for making linimentum calcis were at hand, Mr. Taylor used this old-fashioned application, in the first instance. We discussed the picric acid lotion method, but saw no reason to change, especially as Mr.

CLINICAL CHART OF TEMPERATURE, &c.

Age 87 years.

Disease: NEPHRITIS AFTER BURNS.

Name S. M.



Taylor had knowledge of toxic effects, in connection with delicate kidneys, having followed the application of picric acid. The burnt surface was dressed twice a day—in the evening by the trained nurse in charge of the patient.

On March 10 the body temperature ranged between 101° and 102° F.; the pulse varied from 88 to 96, and the respirations were steady at 24 per minute. On the evening of March 12 the axillary temperature touched 103°. A daily careful examination failed to detect any evidence of pneumonia.

On March 16 Mr. Taylor changed the dressing of the wounds to a pigment recommended by Lieutenant-Colonel A. J. Hull, F.R.C.S., R.A.M.C. It is composed as follows : Beta-naphthol, one-quarter (0.25) per cent. ; oil of eucalyptus, 2 per cent. ; olive oil, 5 per cent. ; soft paraffin, 67.75 per cent., and hard paraffin, 25 per cent. The mode of preparation consisted in mixing the paraffins and olive oil in a jar, then adding the beta-naphthol and eucalyptus oil at a temperature of 55° C. (132° F.). In the cold weather which prevailed at the time it became necessary to melt the ointment, liniment, or pigment, before it could be painted over the burned surface with a camel's hair brush. This application was anodyne as well as antiseptic, nor did it require to be frequently applied.

Although the temperature fell gradually, the patient's general condition did not improve. His bodily powers began to fail, and he complained of increasing weakness. Restless nights were avoided and quiet sleep was secured by a draught containing 20 minimis of nepenthe and 10 minimis of tincture of digitalis in an ounce of chloroform water.

On March 20 the temperature, which had been coming down by degrees, rose to 102.5° in the forenoon, and the urine became scanty and was turbid from urates. Remembering that at intervals, in recent years, the urine had been slightly albuminous, I examined it carefully on March 21. It was of normal colour, but somewhat turbid. The reaction was acid. Its specific gravity was 1022. A

moderate quantity of albumen was present. On standing it threw down a considerable and heavy deposit. Under the microscope this was resolved into numerous granular tube casts, and vast numbers of spherules of urate of sodium and of colourless uric acid, as well as hexagons of the latter. These rare forms of uric acid are figured in Dr. Hermann Rieder's *Atlas of Urinary Sediments*,^a Plate XI., Fig. 2, and Plate XXI., Fig. 4; and also in a work published many years previously—namely, Dr. Lionel S. Beale's *Kidney Diseases, Urinary Deposits, and Calculous Disorders*,^b Plate XXVII., Fig. 152, Plate XXVIII., Figs. 155, 156, and Plate XXX., Fig. 166. Going still further back to 1853, we find such uric acid crystals figured in Plate IV. of Dr. Otto Funke's *Atlas der physiologischen Chemie*.^c

A subsequent analysis of the urine on March 25 gave the following results:—Urine of normal colour, slightly turbid, acid; spec. grav. 1018; moderately albuminous, but free from sugar. Under the microscope several leucocytes, epithelial cells, and many filamentous organisms (probably of extraneous origin) are seen, as well as granular and partly hyaline tube-casts. There are some large coloured crystals of uric acid, a few colourless spherical crystals of the same, or of sodium urate.

At this date—March 25—the patient's state was very unsatisfactory and unpromising. His mental and bodily powers were ebbing fast, his tongue was coated and dry, and there was complete failure of appetite.

The last phase was ushered in by a violent shivering fit, lasting twenty minutes, in which the patient's bed shook, at 3 30 o'clock on the afternoon of March 26. This was quickly followed by a rise of temperature to 105° F. The

^a Translated by Frederick Craven Moore, M.Sc., M.D. (Viet.). Edited and annotated by A. Sheridan Delépine, M.B., C.M. (Edin.), B.Sc. London: Charles Griffin & Co. 1899. Large 4to.

^b Third edition: London: John Churchill & Sons. 1869. Demy 8vo.

^c Leipzig: Verlag von Wilhelm Engelmann. 1853. Also as a Supplement to C. G. Lehmann's *Lehrbuch der physiologischen Chemie*.

pulse ran up to 120 and the respirations to 46 in the minute. Next morning the temperature came down to 102°, the pulse to 108, and the respirations to 40. But the patient was drowsy, and when roused incoherent. The first sound of the heart was failing, faint, and prolonged into a murmur.

The end came at 3 a.m. of March 28, after a nephritis of ten days' duration and on the twentieth day from the accident. Regard being had to the extensive nature of the injuries and to the patient's very advanced age (eighty-seven years), his survival for so long as twenty days bears testimony to his wonderful vitality. It was indeed a tragic ending to a long and busy life of kindly service to his fellowmen. A *post-mortem* examination was not obtainable.

Apart from the interest attaching to the uncommon forms assumed by the free uric acid in the urine in this case, the occurrence of nephritis as a sequel of burning deserves consideration.

In an admirable article on "Burns and Sealds" in the second edition of the *Encyclopædia Medica*,^a the author, Dr. Alex. Miles. Senior Lecturer on Clinical Surgery, University of Edinburgh; Surgeon, Royal Infirmary, Edinburgh, states that "if the patient survives a few days, active inflammatory signs may supervene in the intestinal canal, lungs, pleura, kidneys, or meninges, and ulceration may follow in the stomach or duodenum. The relative frequency of these lesions may be gathered from the following statistics of 200 cases by Schjerning:—

" Hyperæmia of brain occurred in	-	49	per cent.
Hyperæmia of lungs	„	36.5	„
Nephritis	„	28.2	„
Pneumonia	„	27.0	„
Hyperæmia of intestines	„	22.2	„
Pleurisy	„	18.8	„
Ulcer of duodenum	„	12.4	„
Meningitis	„	10.5	„

^a Volume II., page 544. Under the general editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Edinburgh and London : W. Green & Son, Ltd. 1915. Royal 8vo.

In discussing the local treatment of recent burns of the first, second, third, and fourth degrees, Dr. Miles holds that "in picric acid we have an agent which meets all our requirements in a way not previously attained by the older methods. It is employed in solutions varying in strength from 1 in 100, which is practically a saturated watery solution, to 1 in 50 when alcohol is added. It may be dissolved in sulphuric ether forming a solution of about 1 in 20, which is painted on to the affected area, and on the evaporation of the ether leaves a covering of a very fine powder of picric acid."

He adds that a useful lotion of moderate strength is made as follows :—

Take of—Picric acid	-	-	$1\frac{1}{2}$ drachms.
,, Absolute alcohol	-	-	3 ounces.
,, Distilled water to	-	-	40 ,,
Dissolve.			

Dr. Miles states that in a few isolated cases toxic symptoms—nausea, vomiting, diarrhoea, dark-coloured urine, yellowness of skin, and drowsiness—have been alleged to follow its use. "But those"—he adds—"who have had most experience with picric acid have not observed any symptoms attributable to its absorption. The writer, after an experience of over several hundred cases treated by this method, has not yet met with any untoward effects. In young children the solution may be diluted to about half its strength with advantage."

It is to be remembered in connection with this very favourable opinion that Dr. Alex. Miles was one of the pioneers of this method of treatment. His paper "On the Use of Picric Acid as a Primary Dressing for Burns" appeared in the *Scottish Medical and Surgical Journal* in 1897.

The *British Medical Journal*, April 28, 1917 (page 549), reminds us that the paraffin treatment of burns was introduced by Dr. Barthe de Sandfort, of Paris, who described it to the Académie de Médecine rather more than

three years ago.* Under the heading "Paraffin Mask for Burns," the origin and history of the treatment are detailed in the *British Medical Journal*, July 29, 1916 (page 153). In a letter to the *Times* early last year Mr. Albert Gray, C.B., K.C., Chairman of the French Wounded Emergency Fund, drew attention to Dr. Barthe de Sandfort's method of treating burns by paraffin as practised at the St. Nicholas Hospital, Rue Ernest Renan, Issy-les-Moulineux, Paris.

Dr. Sandfort used a proprietary article to which the name "ambrine" was given. He was led by his experience of the mud baths of Dax, in Gascony, to employ the method in rheumatism and arthritis in 1902. In 1903 he began using it as an application, after cleansing the parts, to ulcers and burns, spraying it on at a temperature of 80° C. (176° F.) and even as high as 100° C. (212° F.), without inconvenience. He considered that one chief advantage of the method was that, after the paraffin had solidified, it exercised a slight but long-lasting pressure upon the part. To increase its toughness and suppleness he added a certain proportion of resins, by preference oil of amber (*oleum succini*). Hence the term "ambrine."

In his paper at the Académie Dr. Sandfort stated that under the paraffin shell intense lymphocytosis occurs, followed by the appearance of islets of epithelium. These gradually extend, and Dr. Sandfort asserts that cicatrisation finally takes place without contraction.

The writer in the *British Medical Journal* goes on to state that paraffin made fluid by heat has been used for preparing casts of limbs and various other parts of the body, including the head and face.

When Professor Peters, of Toronto, described in that Journal in 1898 a method in which a paraffin spray, followed by an iced-water spray, was employed, the late Mr. Lawson Tait wrote to say that he had used melted paraffin, put on with a rough painter's brush, with the help of a sponge and some iced water in 1864. Dr. E.

* *Bulletin de l'Académie de Médecine de Paris*, April 14, 1914.

MacDowell Cosgrave also stated that he had used a similar method devised by Mr. Joseph Lewis, of Dublin.

The paraffin, or "ambrine," treatment of burns introduced by Médecin-majeur Barthe de Sandfort (late of the French Navy) has been adopted by the Naval Medical Service afloat. Sir Arthur May, the Director-General of the Royal Navy, has favoured the *British Medical Journal* with a description of the spraying apparatus employed at present in the Navy. The apparatus is made for the Service by Messrs. Down Bros., St. Thomas's Street, London, S.E., who supplied the *British Medical Journal* with an explanatory illustration. It will be found at page 549 of the Journal for April 28, 1917.

Another point of interest in connection with the urine, passed in the nephritis stage of this patient's fatal illness, is the uncommon form assumed by the crystallisation of uric acid as regards shape and absence of colour.

Lionel Beale wrote^a :—"Uric acid deposited in urine can generally be distinguished by its colour from other crystalline deposits, although two or three instances have come under my notice in which the crystals were found to be perfectly colourless."

In Rieder's work we read^b :—"Under the microscope uric acid appears as yellow, yellowish-green, brown, or brownish-violet crystals, whose fundamental form is the rhombic prism. . . . Uric acid may also occur in the form of four and six-sided colourless plates of varying size, particularly in leukæmia. . . . They differ from the somewhat similar cystin crystals in not being imbricated and in not being [rapidly] soluble in ammonia ; but they are readily dissolved by caustic potash or soda. In addition to these six-sided plates one finds, occasionally, other colourless forms, rounded or oval in shape and having a central depression or radial striation."

The present case does not confirm Dr. Delépine's gloss

^a *Loc. cit.*, p. 371.

^b *Loc. cit.*, pp. 28 and 30.

on the above statement of Dr. Riedel. He adds:—“These forms are probably never found in acid urines, and are the result of unequal solution of typical crystals, when the urine has become ammoniacal.” In my patient’s case the urine was distinctly acid in reaction, and showed not the least tendency to become ammoniacal.

PERISCOPE.

A “DUBLIN HOSPITAL” FOR FRANCE.

WE understand that the War Office has accepted an offer from the Medical Profession of Dublin to staff a base hospital in France for a period of at least a year. The members of the staff will work in relays, no period of service to be less than three months. The selection of the staff has been in the hands of the Presidents of the two Royal Colleges, and within the somewhat narrow limits of age set by the War Office—40 to 55—they have been able to enlist the services of practically all the hospital surgeons and physicians of Dublin who are not already on service. It is hoped that the first party will leave Dublin within the next few days with Professor E. H. Taylor as senior surgeon, and Dr. A. R. Parsons as senior physician. It is clear that by accepting the services of medical men for short periods and by assuring them of employment suitable to their capacities, the War Office can secure men who could not under other conditions offer themselves. We cannot but think that if the War Office had recognised this fact earlier, it would not be reduced to its present straits for medical men. Moreover, the needs of the Army could have been satisfied without such grave disturbance of civil practice as must now occur. An offer from Dublin similar to that now accepted was made a year or two ago and rejected, and similar offers from the Medical Profession of Belfast and of Cork were also refused.—*Medical Press and Circular*, April 25, 1917,

PART II. REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Chemistry for Beginners. And for use in Primary and Public Schools. By C. T. KINGZETT, F.I.C., F.C.S., Past Vice-President, Society of Public Analysts; Hon. Member, Société française d'Hygiène. London : Baillière, Tindall & Cox. 1917. Cr. 8vo. Pp. vi + 106.

In his Preface, the author advances a plea for giving all our boys—and why not all our girls also?—the earliest opportunity of acquiring an elementary knowledge of science and, in particular, of chemistry. He rightly points out that the phenomenal industrial progress made by Germany during the last half-century has, in the main, resulted from the wide teaching and application of chemical science in that country. He is profoundly convinced that the future commercial prosperity of the British Empire will depend chiefly on the greater cultivation of science, and more especially on the utilisation of chemical knowledge in respect of the resources of that Empire.

We agree with Mr. Kingzett : only we trust that the pursuit of scientific knowledge will not lead our youth to apply it to the service of the Devil. There is a point beyond which we must not copy Germany, or follow in her footsteps.

The book—printed on “war-paper”—is divided into four parts. Part I. deals with matter : its constitution, states and properties ; Part II., with force and energy ; Part III., with the atmosphere, the elements and their principal compounds ; and Part IV. includes a useful dictionary of technical terms which serves as an index at the same time.

One example may be given to show how thoroughly this book has been brought up-to-date. Page 81 supplies a complete list of the elements, with their symbols and international atomic weights as revised for the year 1916 in the light of the most recent investigations.

There are very few points open to criticism. On page 32 a tabular comparison between the Centigrade and Fahrenheit temperature scales is most puzzling, and indeed includes one grave error in assigning -101.84° F. as the freezing point of mercury. The puzzle consists in defining the theoretical zero of temperature as -273° C. If we accept that temperature as zero, as is now done in scientific circles, the Centigrade scale should begin at that point with the symbol 0° C. Freezing point of water then becomes $+273^{\circ}$ C., and so on through the remainder of the scale. If the Fahrenheit scale is left as it is, the freezing point of mercury should be entered in the table as -37.8° .

In an elementary manual of chemistry, published in 1917, it is, we think, desirable that the learner and beginner should become accustomed to speak of potassium hydrate (or hydroxide) and sodium hydrate (or hydroxide) rather than of potash and soda, and therefore nitrate of *soda* (pages 45 and 46) should preferably have been written nitrate of *sodium*. In the same section on "Nitrogen," only two explosives are mentioned—nitroglycerine and guncotton. T. N. T. (tri-nitro-toluene) might have been added, seeing how often it is spoken of and written about at the present day. These, however, are merely minor points, and we can cordially recommend the book to teachers and pupils alike as both readable and instructive, as well as written in simple, intelligible language.

Common Diseases of the Male Urethra. By FRANK KIDD,
M.B., B.C. (Cantab.), F.R.C.S. Eng. London : Long-
mans, Green & Co. 1917. Demy 8vo. Pp. xi + 132.

THIS little book consists of six lectures on the subject of urethritis. The author tells all that is worth

knowing about this subject in a clear and most attractive style.

Treatment is admirably done, not over-loaded with detail, but full of useful hints.

The book is well illustrated, and is well up-to-date, both in pathology and treatment, and will certainly add to the author's reputation.

The Causation of Sex in Man. By E. RUMLEY DAWSON, L.R.C.P. (Lond.) ; M.R.C.S. (Eng.). Second Edition, with 22 Illustrations. London : H. K. Lewis & Co., Ltd. 1917. Pp. xiv + 226. Demy 8vo.

IT is not many years since the fireside scientists were exclaiming, "There will be no flying machines in our time." Yet aeroplanes have come to stay. While we fear that the causation of sex will not be discovered in our time the unexpected may happen, and positive proof may be forthcoming. We once read a novel called "The Dangerous Age," and disliked it with a wholesome dislike. Soon after a review of this work appeared in "The Journal of Obstetrics and Gynaecology of the British Empire"; we then read the book from the medical point of view, and found it extremely satisfying. Dawson's "Causation of Sex in Man," if read from the scientific point of view, does not bear close scrutiny. If read as a story-book, containing much of interest and usefulness, the reader will be repaid. Dr. Dawson is out to prove his theory, and to disprove any other theory. And he does so to his own satisfaction. But he does not prove how a woman with congenital absence of the right tube and ovary can bear children of both sexes.

While we feel confident that the author has worked hard and spent much time in his labours, until he brings forward further proof of his theory we must remain sceptical, even as the *Daily Mail* did of the "prophet" Rawson.

B. S.

The Organs of Internal Secretions : Their Diseases and Therapeutic Application. A Book for General Practitioners. By IVO GEIKIE COBB, M.D., M.R.C.S.; late Assistant to Out-Patient Physician, the Middlesex Hospital. London : Baillière, Tindall & Cox. 1917.

THIS little book is composed of a series of articles printed by the author for the *Medical Press and Circular* some months ago. It is written in a casual, chatty manner, and does not contain anything very new, but doubtless the over-worked practitioner on the look-out for mild instruction conveyed in a palatable form will read it over with pleasure and some little profit. There is a great deal of overlapping in the different chapters, but perhaps this is intentional, with the object of driving home the points which the author intends to convey. We doubt whether the reader when he has finished the book will know much more as to when he should prescribe the various organic extracts, with the exception of the thyroid gland, than he did before his study; perhaps, however, this is the fault of the subject and not of the author.

Hospital of the Protestant Episcopal Church of Philadelphia.
Medical and Surgical Reports of the Episcopal Hospital.
Vol. III. Philadelphia : Press of Wm. J. Dorman.
1915.

THIS volume of the Reports of the Protestant Episcopal Church of Philadelphia contains thirty-eight papers, the majority of which are clinical and show how, in every branch of medicine, our Transatlantic cousins continue to make progress.

In research work the article "Various Types of Lues" shows how great has been the advance in bacteriology and bio-chemistry within the past few years, and tells how valuable laboratory work has proved to Medicine, both as an aid to diagnosis and as a guide to therapeutics.

Some of the conclusions the authors arrive at are rather

startling ; and it will take some time to convince the rank and file of the profession that syphilis is so terribly malignant, especially those who had accepted Herbert Spencer's dictum that the universality of the disease had robbed it of much of its virulence. Spencer founded his statement on the medical literature of the preceding centuries and the pathological specimens. To-day we are inclined to say that our predecessors abused the use of mercury, and that better results followed on the use of moderate salivation followed by iodide of potassium, and still better by Donovan's combination of arsenic. Yet we cannot overlook the museum specimens, which demonstrate that even when the profuse salivation ceased and cinchona and iodide replaced mercurialisation the disease wrote its fierce malignancy in unforgettable letters on human bones. Now, when in the light of newly acquired knowledge we learn how the disease affects the body and how modern therapeutic remedies influence the action and growth of the disease, there is left to us a reasonable hope of freeing humanity of this scourge as completely as Jenner freed us from small-pox and Long drove pain from the operation theatre.

"Functional Kidney Tests" is the title of a valuable clinical paper telling of the use of phthalein in the differentiation of the dominating factors, the heart or kidneys, in renal disease. "Functional Kidney Tests" is concerned with the value in medical conditions, and the author endeavoured to devise methods by which nephritis may be recognised before the usual signs appear ; the rarity of nephritis ; and how the prognosis may be made. We may just say that he considers the phenolsulphonephthalein test as the most trustworthy one we possess. A series of good surgical clinical papers follows. Space does not allow of these papers being noticed as fully as we would desire or as their merits justify. But just before considering them we would draw attention to a short paper, "Zoster Arsenicalis," in which the author labours to show, and we think unsuccessfully, that arsenic in some instances pro-

duces herpes. He illustrates his argument by three cases in his own practice where herpes followed the use of arsenic. Arsenic is at present used almost universally for the treatment of chorea, on the recommendation of Murray ; and we notice no increase in herpes. We would, however, draw attention to the fact that herpes of the trunk not infrequently leaves a fine white linear streak that simulates a fine incision scar, which is of much importance in medical jurisprudence.

“Treatment for Old Contracted Cicatrices.”—The many forms of treatment for old cicatrices are eloquent pleadings for some really good operation. The author illustrates his paper by portraits which confirm the good results narrated in the letterpress, and we confess that in certain cases we have had good results from fibrolysin ; yet, as a rule, cicatricial cases are disappointing.

The unusual accident of rupture of the biceps is the subject of the next paper ; the author reports eight cases and gives an exhaustive bibliography. He concludes that “conservative methods of treatment have given satisfactory results in a few isolated cases only. Since successful results have been gained by operation cases, it is evident that the operative treatment is to be recommended.”

“Disabilities following Fractures of the Limbs” is the title of a long and profusely illustrated article, well adapted for medical students, but out of place in an hospital report, where we do not expect to find text-book teaching.

“Ununited Fracture of the Neck of the Femur” is the title of a permanently useful contribution to surgery ; and at last we may hope that ununited fractures of the neck of the femur will cease to be included in the opprobria of surgery.

“Traumatic Dislocations of the Hip” is the subject and title of a short and excellent article, in which the author illustrates his theory of treatment by a history of seven cases. The article contains many skiagrams, which greatly contribute to make the nature of the injury and the steps taken to correct it intelligible.

"Modern Bone and Joint Surgery" is a very suggestive and helpful paper, but the author rather under-estimated what his predecessors did. Bone grafting failed in their hands because of sepsis ; they were not wanting in either boldness nor skill. James R. Read, Surg. P.A.C.S. (*Confed. States Med. and Surg. Journal*, January, 1864), excised the head of the thigh bone of Lieutenant James M. Jarrett, Company C., 15 N. C. Regt. ; Surgeon James Bolton, Richmond, Va., removed a bullet from the condyle of the left femur, which he had received in the victory of Fredericksburg, Dec. 20, 1862 : O. T. Manson, Surgeon, P.A.C.S., excised the upper third of the humerus of W. H. Ricketts, private, A. 13 H. Virginia ; and Surgeon James Bolton, P.A.C.S., devised an apparatus for pinning together the fractured extremities of broken bones. It consisted of two vertical pins and a horizontal bar or plate which is described and pictured in the March, 1864, number of the *Confederate States Medical and Surgical Journal*. We might quote more, but we have done enough to show that joint surgery was practised and reported many years ago ; withal we recognise the value and importance of Dr. A. P. C. Ashurst's article.

"Arthroplasty of the Elbow" and "Cinematoplastie Amputations," two articles also by Dr. A. P. C. Ashurst, are of great interest. There can be little doubt that when the war is over cinematoplastie surgery will be properly and largely availed of.

"Silk Ligaments and Tenodesis" is the title of an article urging their use in cases of infantile paralysis. We welcome every effort to save and make more happy childhood, but we are not much impressed with the success attending the method recommended.

"Excision of the Tongue" is a long article, profusely illustrated, containing quotations many, theories many, and advocating many very drastic steps. We fail to see any original idea in the article and cannot understand why it is placed in the reports.

We have so far made no reference to the opening article,

"History of Anesthesia." Why the author undertook the task we cannot imagine, for, to any reader familiar with the subject, it is plain that the writer of the article did not know its history. By means of quotations he fills some sixteen or seventeen pages and succeeds in giving a wholly wrong picture of a great discovery. How the article came to find a place among so many valuable contributions we have no means of knowing, but there it is—the fly in the ointment.

It is no more than justice to say that the volume is beautifully printed and bound, and from its appearance alone gives the reviewer a very favourable impression from the first.

Archives médicales belges. February, 1917. Paris :
J. B. Baillière et Fils.

THIS number of our valued contemporary opens with an interesting article on the treatment of typhoid fever by injections of peptones, by Dr. P. Nolf, Professor of the Faculty of Medicine at Liège. From his practice at the Hospital of Saint Idesbald, he concludes that the value of the treatment has become much enhanced during the past two years. Notably, in cases of typhoid fever, its effects were most favourable. He considers its use is clearly indicated in cases in which intestinal haemorrhage occurs—one of the most serious of the complications of typhoid. To the objection to this treatment by the critics, who assume that a loss of blood from an ulcerated vessel cannot be controlled much less arrested by a remedy which is shown by experiments on the lower animals to diminish the coagulability of the blood, the author answers that in a case of very severe bleeding with recurrences, in which all the usual remedies were tried without success, he tried the peptone, and success attended its use. Since then peptone has been the routine treatment for intestinal haemorrhage

occurring during the course of typhoid fever in the hospital, and its use was attended with unvarying success.

Dr. Nolf uses a 5 per cent. solution, and injects 10 c.m. into the buttock daily for several days, if the haemorrhage is severe. All the stools are examined, and on the least sign of intestinal bleeding the injections are resorted to as a preventive measure. The favourable results from the use of the remedy are illustrated by cases, and further, by an account of some very interesting experiments which were made on dogs. These go to show that marked peristaltic contractions of the intestines were excited by the peptone injections. In a case of a woman, 42 years of age, who had a temperature of 104° and who suffered from severe meteorism, an intravenous injection of a gramme and a half of peptone in artificial serum was followed by the most favourable results; though it must be confessed that the immediate effect was rather alarming: the temperature rose from 104° F. to 107.6° F., and the rise was preceded by a rigor, which lasted for half-an-hour. Eight hours later the meteorism had disappeared, and the temperature had fallen to 96.8° F. The article is suggestive, and full of material for thought, dealing as it does with one of the most common and most dangerous diseases. It well repays reading. A clinical theory of ictero-hémorragique of the spirochète follows, and is marked by all the attention to detail which characterises the writing of French physicians. "The Localisation of Foreign Bodies," by Dr. Henrard, is a highly technical paper, freely illustrated by illustrations of the numerous apparatus necessary to ensure absolute accuracy of localisation of foreign bodies in human tissues. Dr. Foucet writes of "Sutures of Wounds in War," a subject which came prominently before the profession soon after the Germans adopted the use of poisonous gases in warfare, and he decides in favour of immediate suture.

We think that so much depends on the cause and nature of the wound that no general rule can be accepted as satisfactory.

The remainder of the number is devoted to extracts from contemporary journals : they are judiciously selected, of practical value, and include interesting matter on almost every province of medicine.

It is very gratifying to find our Belgian professional brethren so self-possessed and undaunted amid all their terrible suffering that, in their affliction, they are equal to the production of a journal which is an honour to Medicine and a credit to the courage and intelligence of their country.

Charlotte Medical Journal. Vol. LXXIV. No. 6.

THIS number opens with an appreciative biographical sketch of Dr. Robert Lee Payne of Lexington, one of a family which has followed medicine since the days of Jefferson.

Dr. L. F. Barker's article "On the Growth of Medical Knowledge concerning the Malady known as Infantile Paralysis" is a very valuable historical and pathological paper, in which the labours of Heine, Charcot, Medini, Wickman and a number of American writers are duly acknowledged. But in some unaccountable manner no reference is made to Buzzard's Gulstonian lectures (1905), although they contain the first inklings of the lesions peculiar to that disease. The author gives a very full and interesting account of the aetiology of the disease, of the cultivation of the virus, and of the successful vaccination of monkeys with the cultures. Dr. Barker is full of hope that the virus by attenuation may provide the medical profession with a prophylactic and a remedy. It is, however, disappointing to find that the predisposing causes, other than infection by micro-organisms, find no place in the paper.

Under the title "Amœbic Conjunctivitis," is described an inflammation which is seemingly correlated with pyorrhœa alveolaris, and persists until the alveolar lesion is cured.

The remaining papers call for no special mention, the majority of them being of purely local interest.

PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—R. D. PUREFOY, M.D., F.R.C.S.I.
General Secretary—J. A. SCOTT, M.D., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—E. J. McWEENEY, M.D., F.R.C.P.I.
Secretary—T. T. O'FARRELL, M.D., F.R.C.S.I.

Friday, March 9th, 1917.

Exhibits.

A Mesenteric Tumour.

DR. POLLOCK demonstrated a specimen of mesenteric tumour together with microscopical preparations. The tumour was removed *post-mortem* from an elderly diabetic, suffering from intestinal obstruction, whose general condition precluded operation. The tumour was situate in the middle line, and was freely movable. Upon opening into the abdomen at the autopsy a large abscess cavity was drained, whose anterior wall was formed by the abdominal muscles, the lateral and posterior limits being composed of tumour mass. At no point could stenosis of the intestine be demonstrated, but a remarkable condition was present—namely, that in at least two places the lumen of the bowel was in continuity with the cavity or pus sac in the centre of the tumour.

Much critical discussion of this statement ensued, but—

DR. W. D. O'KELLY satisfactorily proved the truth of the observation—that the cavity in the neoplasm formed a large expansion or chamber, with ingress and egress through ad-

joining loops of small intestine. No metastases could be found. Histologically, the tumour was composed of cells varying in size, polygonal in shape, neither showing strictly carcinomatous arrangement nor appearing to be sarcomatous. The presence of numerous cell inclusions was a very pronounced and constant feature of the section, and some multinucleated masses were present. He ventured a diagnosis of primary malignant neoplasm derived from the cells of the peritoneum.

Psammoma from the Choroid Plexus in the Fourth Ventricle.

DR. T. T. O'FARRELL exhibited this specimen. It had been forwarded to him by the late Dr. Charles J. Stack some time prior to the latter's death. The patient from whom the specimen had been taken *post-mortem* was a man aged 55 years. On admission to hospital he gave a history of a blow on the head some three years previously, which, however, seemed to have bearing on the case. His mental condition was that of melancholia, with hypochondriasis. He was emaciated, and looked older than he stated. The knee jerks were absent; Romberg's sign was present, but Babinski's was absent. There was a slight amount of ankle clonus. The patient had optic atrophy, and for some time before his death had paraplegia. At the *post-mortem* the meninges were rather thickened, and adherent; there was some flattening of the cerebral convolutions; the lateral ventricles were distended, and showed some granulations; the cerebro-spinal fluid was increased in amount. Tucked away in the lateral corners of the fourth ventricle were two small tumours, each about the size of a small pea, but one slightly larger than the other. These tumours were attached to the choroid plexus, and had no connection with the pontine or medullary substance. Microscopically, these tumours consisted of a rather loose, delicate, vascular connective tissue network, in the meshes of which were numerous small concretions. These were laminated, and had a circular outline; some of them exhibited a lumen, in which were red blood corpuscles. It was evident that the calcification was distributed around the small vascular spaces.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—PROF. D. T. BARRY, M.D.

Secretary—J. R. D. HOLTBY, M.B.

*Friday, March 16th, 1917.**Exhibit: Right-sided Aorta.*

PROF. A. F. DIXON showed a specimen in which the aorta was present on the right side of the body. The vessel arose in the usual manner from the left ventricle, but then arched over to the right side, and descended on that side through the thorax and abdomen. The ligamentum arteriosum connected the pulmonary artery with the left subclavian artery.

The Food Consumption of Working Class Families in Great Britain and Ireland.

PROF. THOMPSON calculated the food value of diets of working class families collected by the Board of Trade in 1903-4. The figures are divided into two groups—urban and rural; and further sub-divided into five groups, according to wages. Under 25s. per week, the food value of the diet, calculated on the recognised standard, was hardly sufficient. The figures for the Midlands of England are in all groups generally the lowest, and the Irish figures tend to be highest. The amount of protein taken tends to rise with increasing wages. The amount of energy taken in the form of bread decreases with increasing wages. At 25s. a week and lower, over half the energy is from bread; at 40s. and above, 42 per cent.

The Reaction Regulator Mechanism of the Blood.

PROF. MILROY presented results of an inquiry into the manner in which the blood reaction varied under different CO₂ pressures. With CO₂ increasing pressures within the limits normally met with, the reaction of the blood plasma varied very slightly. This is due more to the proteins of the blood than to the salts. The same is true of the contents of the corpuscles, which, however, show a more acid reaction. In soldiers suffering from "trench heart" the reaction of the plasma altered more rapidly under increasing CO₂ tension. This is apparently due to some alteration in the salt content.

SANITARY AND METEOROLOGICAL NOTES.

VITAL STATISTICS.

For four weeks ending Saturday, April 21, 1917.

IRELAND.

THE average annual death-rate represented by the deaths—exclusive of deaths of persons admitted into public institutions from without the respective districts—registered in the week ended Saturday, April 21, 1917, in the Dublin Registration Area and the eighteen principal provincial Urban Districts of Ireland was 22.7 per 1,000 of the aggregate population, which for the purposes of these returns is estimated at 1,127,268. The deaths from all causes registered in the week ended Saturday, April 21, and during the period of four weeks ended on that date, respectively, were equal to the following annual rates per 1,000 of the population :—Nineteen Town Districts, 22.7 and 22.4 ; Dublin Registration Area, 26.1 and 25.3 ; Dublin City, 27.7 and 26.8 ; Belfast, 22.8 and 22.1 ; Cork, 26.5 and 22.9 ; Londonderry, 18.2 and 20.9 ; Limerick, 10.8 and 18.3 ; and Waterford, 5.7 and 16.6.

The deaths from certain epidemic diseases—namely, enteric fever, typhus, small-pox, measles, scarlet fever, whooping-cough, diphtheria, dysentery, and diarrhoeal diseases—registered in the nineteen town districts during the week ended Saturday, April 21, 1917, were equal to an annual rate of 1.5 per 1,000. Among the 172 deaths from all causes in Belfast were 3 from enteric fever, 4 from measles, 1 from scarlatina, 1 from diphtheria, 3 from diarrhoeal diseases—2 among children under 2 years of age—and 2 from cerebro-spinal fever. One of the 14 deaths from all causes in Londonderry was from scarlatina.

DUBLIN REGISTRATION AREA.

The Dublin Registration Area consists of the City of Dublin as extended by the Dublin Corporation Act, 1900, together with the Urban Districts of Rathmines, Pembroke, Blackrock and Kingstown. The population of the Area is 399,000.

In the Dublin Registration Area the births registered during the week ended April 21, 1917, amounted to 198—94 boys and 104 girls, and the deaths to 217—103 males and 114 females.

DEATHS.

The deaths registered, omitting the deaths (numbering 17)

of persons admitted into public institutions from localities outside the Area, represent an annual rate of mortality of 26.1 per 1,000 of the population. The correspondingly corrected death-rate for the sixteen weeks ended April 24 was 25.3, which was 0.2 above the average corrected death-rate for the first sixteen weeks of the ten years 1907-1916. The annual rate of mortality represented by all the deaths registered during the first sixteen weeks of 1917 was 27.1, compared with a corresponding average rate of 26.5 in the preceding ten years, 1907-1916.

The 200 deaths appertaining to the Area included 13 from measles, 2 from whooping-cough, 1 from influenza, and 3 from diarrhoeal diseases. In the three preceding weeks deaths from measles had numbered 17, 20 and 18; deaths from whooping-cough, 1, 3 and 1; from influenza, 1, 1 and 3; and deaths from diarrhoeal diseases, 7, 3 and 2, respectively.

Tuberculosis caused 29 deaths, as against 23, 33 and 21, respectively, in the three weeks preceding. Of the 29 deaths ascribed to tuberculosis, 23 were referred to pulmonary tuberculosis, 2 to tubercular meningitis, 2 to abdominal tuberculosis, and 2 to disseminated tuberculosis.

Thirteen deaths were caused by cancer; 2 by simple meningitis; 17 by pneumonia (8 by broncho-pneumonia, 2 by lobar pneumonia, and 7 by pneumonia, type not distinguished); 15 by organic diseases of the heart, and 28 by bronchitis.

There were 2 deaths from violence, of which 1 was caused by drowning.

Among deaths of infants under one year old, 4 were ascribed to convulsions, 1 to congenital malformation, 5 to premature birth, and 8 to congenital debility.

Fifty-eight of the deaths registered during the week appertaining to the Area were of children under 5 years of age, 32 being infants under one year, of whom 15 were under one month old. Fifty-two deaths of persons aged 65 or upwards were registered, including 37 deaths of persons of 70 years or upwards.

Of the 200 deaths recorded, 75 occurred in hospitals and other public institutions.

STATE OF INFECTIOUS DISEASES.

The following returns of the number of cases of infectious

Diseases notified under the "Infectious Disease (Notification) Act, 1889," and the "Tuberculosis Prevention (Ireland) Act, 1908," have been furnished by the respective sanitary authorities :—

TABLE I.—SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES notified in the Dublin Registration Area—(viz., the City of Dublin and the Urban Districts of Rathmines and Rathgar, Pembroke, Blackrock and Kingstown), and in the Cities of Belfast, Cork, Londonderry, Limerick, and Waterford, during the week ended April 21, 1917, and in each of the preceding three weeks.

A dash (—) denotes that the disease in question is not notifiable in the District.

CITIES AND URBAN DISTRICTS	Week ending	INFECTIOUS DISEASES												Pulmonary Tuberculosis	Total		
		Mesles	Scarlet Fever	Typhus	Relapsing Fever	Diphtheria	Membranous Group	Pyrexia (origin uncertain) ^a	Enteric or Typhoid Fever	Erysipelas	Puerperal Fever	Whooping-cough	Cerebro-spinal Fever	Diarrhoeal Diseases	Polyomyelitis		
City of Dublin	Mar. 31	—	1	.	.	1	.	.	1	.	2	.	.	.	.	18	21
	Apr. 7	—	1	.	.	6	.	.	1	.	1	.	.	.	.	12	21
	Apr. 14	—	1	.	.	1	.	.	1	.	2	.	.	.	.	11	15
	Apr. 21	—	.	1	.	2	.	.	1	.	2	.	.	.	.	26	31
Rathmines and Rathgar Urban District	Mar. 31	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
	Apr. 7	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
	Apr. 14	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
	Apr. 21	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
Pembroke Urban District	Mar. 31	10	.	.	.	.	.	.	.	.	1	.	1	.	.	—	11
	Apr. 7	4	.	.	.	.	.	.	.	.	.	.	.	.	.	5	5
	Apr. 14	15	.	.	.	.	.	.	.	.	.	.	.	.	.	15	15
	Apr. 21	9	1	.	.	.	.	.	.	.	.	.	.	.	.	1	12
Blackrock Urban District	Mar. 31	3	.	.	.	.	.	.	.	.	.	.	.	.	.	—	3
	Apr. 7	6	.	.	.	.	.	.	.	.	.	.	.	.	.	1	6
	Apr. 14	14	.	.	.	.	.	.	.	.	.	.	.	.	.	1	15
	Apr. 21	11	.	.	.	.	.	.	.	.	.	.	.	.	.	1	11
Kingstown Urban District	Mar. 31	—	.	1	.	.	.	.	.	.	.	.	.	.	.	—	1
	Apr. 7	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
	Apr. 14	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
	Apr. 21	—	.	.	.	.	.	.	.	.	.	.	.	.	.	—	—
City of Belfast	Mar. 31	—	5	9	.	1	.	17	1	5	.	—	2	.	.	4	39
	Apr. 7	—	16	7	.	6	2	1	27	3	.	—	—	.	.	.	64
	Apr. 14	—	9	5	.	4	.	—	10	1	.	—	—	.	.	.	31
	Apr. 21	—	8	3	.	3	.	—	13	1	.	—	—	.	.	.	1	29
City of Cork	Mar. 31	—	1	.	.	.	.	.	1	2	.	—	—	.	.	—	4
	Apr. 7	1	.	.	.	1	1	.	4	2	.	—	—	.	.	—	9
	Apr. 14	—	.	.	.	1	1	.	1	1	.	—	—	.	.	—	3
	Apr. 21	2	.	1	.	.	.	1	1	1	.	—	—	.	.	—	5c
City of Londonderry	Mar. 31	—	1	.	.	.	.	.	.	.	.	—	—	—	—	—	1
	Apr. 7	—	6	.	.	.	.	.	.	.	.	—	—	—	—	—	8
	Apr. 14	—	2	.	.	.	.	.	.	.	.	—	—	—	—	—	2
	Apr. 21	—	3	.	.	.	.	.	.	.	.	—	—	—	—	—	4
City of Limerick	Mar. 31	—	.	.	.	.	.	.	.	.	.	—	—	—	—	—	.
	Apr. 7	—	.	.	.	.	.	.	.	.	.	—	—	—	—	—	.
	Apr. 14	—	.	.	.	.	.	.	.	.	.	—	—	—	—	—	.
	Apr. 21	—	.	1b	.	.	.	.	.	2	.	—	—	—	—	—	3
City of Waterford	Mar. 31	—	.	.	.	.	.	.	.	.	1	.	—	—	—	—	2
	Apr. 7	—	.	.	.	.	.	.	.	1	1	.	—	—	—	—	3
	Apr. 14	—	.	.	.	.	.	.	.	1	1	.	—	—	—	—	2
	Apr. 21	—	.	.	.	.	.	.	.	1	1	.	—	—	—	—	2

^a Continued fever.

^b Suspected case.

^c Not including one case of cerebro-spinal fever.

CASES OF INFECTIOUS DISEASES UNDER TREATMENT IN DUBLIN HOSPITALS.

Table II. exhibits the number of cases of certain infectious diseases treated in the Dublin Hospitals during the week ended April 21, 1917, and the number under treatment at the close of each of the three preceding weeks.

TABLE II.

Diseases	No. of Cases in Hospital at close of week ended			Week ended April 21				No. under treat- ment at close of week
	Mar. 31	Apr. 7	Apr. 14	No. admitted	Dis- charged	Died		
Enteric Fever	15	9	7	2	5	—	—	4
Typhus	—	—	—	1	—	—	—	1
Small-pox	—	—	—	—	—	—	—	—
Measles	111	105	109	43	25	4	123	
Scarlet Fever	18	14	18	4	4	—	—	18*
Diphtheria	14	9	7	2	3	—	—	6
Pneumonia	30	22	20	9	6	4	19	

* Exclusive of 10 patients in "Beneavin," the Convalescent Home of Cork Street Fever Hospital.

From this Table it appears that the cases admitted to hospital during the week ended April 21, and the cases under treatment at its close, respectively, were as follows:—Enteric fever, 2 and 4; typhus fever, 1 and 1; measles, 43 and 123; scarlet fever, 4 and 18 (exclusive of 10 convaleseents at Beneavin, the Convalescent Home of Cork Street Hospital); and diphtheria, 2 and 6. Nine cases of pneumonia were admitted during the week, and 19 remained under treatment at its close. Of the deaths in hospitals during the week 4 were from measles, and 4 from pneumonia.

ENGLAND AND SCOTLAND.

The mortality in the week ended Saturday, April 21, in 96 large English towns (including London, in which the rate was 19.4) was equal to an average annual death-rate of 18.4 per 1,000 persons living. The average rate for 16 principal towns of Scotland was 18.1 per 1,000, the rate for Glasgow being 19.2, and that for Edinburgh 21.4.

INFECTIOUS DISEASES IN EDINBURGH.

The Registrar-General has been favoured by A. Maxwell-Williamson, M.D., B.Sc., Medical Officer of Health for Edinburgh, with a copy of his Return of Infectious Diseases notified during the week ended April 21. From this report it appears that of 43 cases notified, 12 were of diphtheria, 9 of pulmonary tuberculosis, 9 of other forms of tuberculosis, 9 of scarlet fever, 3 of erysipelas, and 1 of puerperal fever. Among the 423 cases of infectious diseases in hospital at the close of the week were 137 of pulmonary tuberculosis, 105 of measles, 79 of scarlet fever, 32 of whooping-cough, 31 of diphtheria, 9 of cerebro-spinal fever, 5 of erysipelas, and 2 of puerperal fever.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of April, 1917.

Mean Height of Barometer,	- - - -	29.964 inches.
Maximal Height of Barometer (25th, at 9 p.m.),	-	30.638 ,,
Minimal Height of Barometer (14th, at 9 a.m.),	-	29.247 ,,
Mean Dry-bulb Temperature,	- - - -	43.0°.
Mean Wet-bulb Temperature,	- - - -	39.9°.
Mean Dew-point Temperature,	- - - -	36.1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	.215 inch.
Mean Humidity,	- - - -	77.1 per cent.
Highest Temperature in Shade (on 29th),	-	61.1°.
Lowest Temperature in Shade (on 1st),	-	24.0°.
Lowest Temperature on Grass (Radiation) (1st),	-	21.0°.
Mean Amount of Cloud,	- - - -	64.9 per cent.
Rainfall (on 12 days),	- - - -	0.896 inch.
Greatest Daily Rainfall (on 17th),	- - - -	0.183 inch.
General Directions of Wind,	- - - -	W., N.W., N.

Remarks.

In keeping with the previous four months, April proved to be a cold month. But it was sharply divided into two nearly equal periods of excessive cold and of seasonable mildness. Opening with a very severe frost for the time of year, in which the thermometer, even in the City of Dublin, fell to 24° in the screen and to 21° on the ground, the first week (1st to 7th) had a mean temperature as low as 36.9° . A moderate precipitation—0.225 inch—was chiefly in the form of hail and sleet or snow. In the second week (8th to 14th) snow and hail again fell at frequent intervals, whitening the ground at times. The rainfall was 0.356 inch on 6 days, and the mean temperature was only 37.8° . The cold spell spent itself in the middle of the third week, and on and after Wednesday, the 18th, the weather was mild and dry, although chiefly cloudy. No rainfall occurred after the 17th. The mean temperature of the third week was 46.1° ; that of the fourth week was 50.0° . Thus, while the first fortnight had a mean temperature of only 37.4° , the second fortnight showed a sudden advance of 10.7° to 48.1° . The long and severe winter, in a word, drew to an abrupt close on the 17th of April. There was an overwhelming prevalence of W., N.W. and N. winds.

In Dublin the arithmetical mean temperature (43.8°) was 3.8° under the average (47.6°). The mean dry-bulb readings at 9 a.m. and 9 p.m. were 43.0° . In the fifty years ending with 1915, April was coldest in 1879 (the cold year) (M. T. = 44.5°), and warmest in 1893 (M. T. = 51.4°). In 1914 the M. T. was 50.4° ; in 1915 it was 48.5° , and in 1916 it was 47.0° . April, 1917, has therefore established a record for coldness.

The mean height of the barometer was 29.964 inches, or 0.114 inch above the average value for April—namely, 29.850 inches. The mercury rose to 30.638 inches at 9 p.m. of the 25th, and fell to 29.247 inches at 9 a.m. of the 14th. The observed range of atmospheric pressure was, therefore, 1.391 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 43.0° , or 3.4° above the value for March, 1917. Using the formula, *Mean*

Temp. = Min. + (Max. — Min.) × .476, the value is 43.5° , or 3.8° in defect of the average mean temperature for April, calculated in the same way, in the thirty-five years, 1871–1905 (47.3°). The arithmetical mean of the maximal and minimal readings was 43.8° , compared with a thirty-five years' (1871–1905) average of 47.6° . On the 29th the thermometer in the screen rose to 61.1° —wind, W.; on the 1st the temperature fell to 24.0° —wind, W. The minimum on the grass was 21.0° , also on the 1st. The mean maximal temperature was 49.9° , the mean minimal temperature was 37.6° .

The rainfall was 0.896 inch, distributed over 12 days. The average rainfall for April in the thirty-five years, 1871–1905, was 1.940 inches, and the average number of rain-days was 16. The rainfall therefore and also the number of rain-days were much below the average. In 1877 the rainfall in April was very large—4.707 inches on 21 days. On the other hand, in 1873, only 0.498 inch was measured on 8 days. In 1914, only 0.719 inch fell on 11 days.

High winds were noted on 12 days, but reached the force of a gale (8) only on the 16th. Hail fell on 10 days—the 1st, 3rd, 5th, 8th, 9th, 10th, 11th, 14th, 15th and 16th. Snow fell on 7 days—the 2nd, 3rd, 5th, 8th, 9th, 10th and 11th. It lay on 4 days. The temperature rose to 60° in the screen on only 1 day—the 29th. It failed to reach 40° on the 1st, 2nd, 10th and 11th. It fell to 32° in the screen on 11 days, and below 32° on the grass on 13 days. The mean lowest temperature on the grass was 34.6° , compared with 37.8° in 1916, 39.8° in 1915, 40.8° in 1914, 38.4° in 1913, 39.7° in 1912, 40.2° in 1911, 36.0° in 1910, and only 31.6° in 1887.

The rainfall in Dublin during the four months ending April 30th amounted to 6.882 inches on 65 days, compared with 10.014 inches on 84 days in 1916, 7.889 inches on 70 days in 1915, only 4.700 inches on 59 days in 1911, an average of 8.338 inches on 60 days in the first decade of the twentieth century, and a thirty-five years' (1871–1905) average of 8.070 inches on 66 days.

At the Normal Climatological Station in Trinity College, Dublin, the observer, Mr. T. Mulock-Bentley, returns the mean atmospheric pressure as 29.973 inches. The range was

from 29.237 inches at 9 a.m. of the 14th to 30.647 inches at 9 p.m. of the 25th. The arithmetical mean temperature was 43.9°, the mean dry-bulb reading at 9 a.m. and 9 p.m. being 44.0°. Rain fell on 11 days to the amount of 0.785 inch, 0.162 inch being measured on the 17th. The number of hours of bright sunshine registered by the Campbell-Stokes sunshine recorder was 126.9, giving a daily average of 4.2 hours. On the 22nd there were 10.8 hours of bright sunshine, and on the 15th, 10.2 hours. The mean earth-temperature at 9 a.m. was 44.1° at a depth of one foot below the surface, and 44.4° at 4 feet. The lowest temperature on the grass (terrestrial radiation) was 16° on the 1st. The highest temperature in the shade was 62° on the 29th; the lowest was 23° on the 1st.

Captain Edward Taylor, D.L., gives the rainfall at Ard-gillan, Balbriggan, Co. Dublin (210 feet above sea-level), as 1.47 inches on 16 days, the rainfall being 0.48 inch below, and the rain-days 1 above, the average for 24 years. The heaviest fall in 24 hours was 0.24 inch on the 5th. The rainfall from January 1st equals 7.55 inches on 68 days—that is, 0.80 inch under, but 1 day over, the average. The thermometers in the screen rose to 62.9° on the 29th, and fell to 21.9° on the 1st. In April, 1897, 3.61 inches of rain fell on 20 days; in 1901, only 0.98 inch on 12 days.

Mr. T. Bateman, of The Green, Malahide, Co. Dublin, returns the rainfall at 0.765 inch on 13 days. The greatest fall in 24 hours was .175 inch on the 17th. Snow fell on the 5th, 8th, 9th, 10th, 11th and 12th.

At Stirling, Clonee, Co. Meath (height above sea-level being 231 feet), Mr. J. Pilkington registered a rainfall of 1.96 inches on 15 days, the greatest measurement on one day being 0.36 inch on the 2nd. From January 1st to April 30th the rainfall at Stirling amounted to 8.68 inches on 70 days.

At the Ordnance Survey Office, Phoenix Park, Dublin, rain fell on 15 days to the amount of 1.291 inches, the greatest measurement in 24 hours being 0.236 inch on the 17th. The total amount of bright sunshine was 131.9 hours, of which 10.3 hours occurred on the 15th, the brightest day of the month.

At Cheeverstown Convalescent Home for Little Children,

Clondalkin, Co. Dublin, Miss Mary Love recorded 1.54 inches of rain on 12 days. The largest falls in 24 hours were 0.24 inch on the 2nd and again on the 17th.

At 89 Anglesea Road, Donnybrook, Dublin, Mr. F. Dudley Joynt, measured 0.725 inches on 12 days, the largest amount recorded in 24 hours being 0.165 inch on the 8th. The thermometer in the shade rose to 68° (?) on the 22nd, having fallen to 27° on the 9th.

Mr. Harold Fayle furnishes the following abstract of observations taken at Sandford Lodge, Ranelagh, Co. Dublin:—

Mean corrected Height of Barometer,	-	29.966 inches.
Highest corrected Reading (25th, 9 p.m.),	-	30.64 ,,
Lowest corrected Reading (14th, 9 a.m.),	-	29.27 ,,
Mean Dry-Bulb Temperature,	-	43.2° .
Mean Wet-Bulb Temperature,	-	40.8° .
Mean Maximal Temperature,	-	50.2° .
Mean Minimal Temperature,	-	36.6° .
Arithmetical Mean Temperature,	-	43.4° .
Highest Temperature in Screen (29th),	-	61° .
Lowest Temperature in Screen (1st),	-	22° .
Lowest Temperature on Grass (1st, 11th),	-	17° .
Nights of Ground Frost,	-	- 17.
Rainfall (on 12 days),	-	0.91 inch.
Greatest Daily Rainfall (8th).	-	0.17 ,,
Mean Amount of Cloud,	-	73 per cent.
Days of Clear Sky,	-	- 2.
Days of Overcast Sky,	-	- 15.
General Direction of Wind,	-	- N.W.

Dr. Arthur S. Goff reports that the rainfall at Belfort House, Dundrum, Co. Dublin, was 1.11 inches on 12 days (?)

At Marino, Killiney, Co. Dublin, Mr. W. J. McCabe, the observer for the Right Hon. L. A. Waldron, D.L., registered 0.93 inch of rain on 8 days. The largest fall in 24 hours was 0.25 inch on the 11th.

Dr. John H. Armstrong reports that at Coolagad, Greystones, Co. Wicklow, the rainfall amounted to 1.06 inches on 14 days. The heaviest fall in 24 hours was .16 inch on the 5th. Hail fell on the 9th, 12th, and 14th. The total rainfall in

1917, up to April 30th, was 6.63 inches on 60 days, compared with 6.07 inches on 56 days in the corresponding period of 1911, 19.08 inches on 74 days in 1912, 18.04 inches in 78 days in 1913, 10.52 inches on 70 days in 1914, 11.44 inches on 66 days in 1915, and 12.46 inches on 86 days in 1916. The cuckoo was heard on the 28th. The first swallow was seen on the 28th. The thermometer rose to 62° on the 28th, having fallen to 28° on the 8th and 9th.

Mrs. Sydney O'Sullivan recorded 0.97 inch of rain on 13 days at Auburn, Greystones, the largest measurement in 24 hours being 0.25 inch on the 5th.

Dr. F. O'B. Kennedy, Resident Medical Officer at the Royal National Hospital for Consumption, Newcastle, Co. Wicklow, reports that the rainfall at that place was 0.98 inch on 16 days, the maximal fall in 24 hours being 0.21 inch on the 10th. The mean temperature of the air was 43.0°, the thermometer in the screen having risen to 61° on the 28th, and fallen to 23° on the 1st. The mean maximal temperature was 50.0°, the mean minimum being 36.0°. The prevalent winds were W. and N.W.

The Rev. Canon Arthur Wilson, writing from the Rectory, Dunmanway, Co. Cork, states that in April 1.14 inches of rain fell on 11 days. The rainfall was 2.87 inches less than the average of the last twelve years (4.01 inches). The heaviest fall in 24 hours was 0.30 inch on the night of the 10th. This fall began with rain and ended with snow. There were also falls of snow on the nights of the 1st, 8th and 9th. More snow fell on those three days than during the whole winter. The first 17 days were very cold, but were bright and sunny, with frequent showers of both sleet or rain. The last 13 days were very fine and sunny, with frost at night. No rain fell after the 15th. The total fall for the four completed months of 1917 was 12.37 inches, or 9.22 inches under the average. It is the lowest measurement for 12 years. The year 1907 had 13.10 inches in the first four months, and the average is 21.59 inches.

PERISCOPE.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF COMMONS.

Wednesday, April 25th.

PUBLIC HEALTH LEGISLATION FOR IRELAND.

MR. ARTHUR SAMUELS asked the Chief Secretary for Ireland (1) whether, with a view to the better and more economical enforcement of regulations by the Local Government Board in regard to epidemic and infectious diseases in Ireland, he would introduce a Bill extending the provisions of the Public Health (Prevention and Treatment of Disease) Act, 1913, to Ireland; and (2) whether, having regard to the representations of the Medical Profession in Ireland and the desirability of securing skilled treatment in cases of child-birth by properly qualified midwives, he would introduce a Bill for Ireland at an early date framed upon the lines of the English Midwives Act of 1902 and the Scotch Midwives Act of 1915. Mr. Duke answered: Bills have been drafted for the purposes mentioned in both these questions.

THE COLLEGE OF NURSING, LTD.—IRISH BOARD

A LOCAL Board, designated the Irish Board of the College of Nursing, Ltd., has been established to superintend the affairs of the College in Ireland. The Board will open an office at 23 Kildare Street, Dublin, on June 1st. Office hours will be from 10 a.m. to 1 p.m. and 2 p.m. to 5 p.m. daily; Saturdays, 10 a.m. to 1 p.m. Previous to that date all correspondence should be directed to the Secretary, Miss Matheson, at 20 Fitzwilliam Square, Dublin.

THE INDIAN MEDICAL SERVICE.

It was announced in the number of this Journal for January, 1916, that after the open competitive examination held in July, 1915, for admission to the Indian Medical Service no similar examination would be held during the continuance of the war, but that such appointments as might be required to meet the absolutely indispensable needs of the

service would be made by nomination by the Secretary of State. To assist him in making these appointments, which, as already announced, will be limited in number to the absolutely indispensable needs of the service, Mr. Chamberlain has appointed a Selection Committee, who will summon and interview such applicants as may appear to be *prima facie* suitable, and make recommendations for appointment. We repeat that notice at the instance of the Under-Secretary of State for India.

Applications for appointment should be addressed to the Secretary of the Military Department, India Office, Whitehall, S.W. 1, and should contain concise particulars of the applicant's medical degrees and career. Applicants must be over 21 and under 32 years of age at the time of application. Particulars regarding pay, promotion, &c., in the service can be obtained from the Secretary, Military Department.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

GLYCOLACTOPHOS

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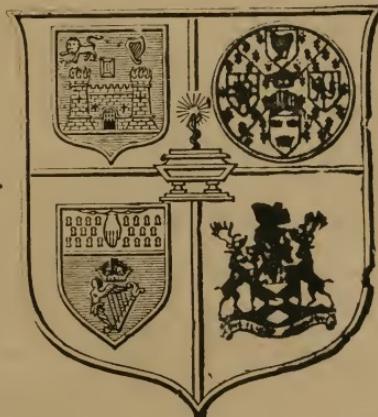
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